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ABSTRACT

Compiled are 52 abstracts of recent master's, doctoral, and major project research in environmental education and communications. Most of the citations included describe work completed in the 1981-82 academic year, although a few abstracts of earlier work have also been included. Abstracts are organized into seven topic areas: (1) site analysis -- descriptions and development plans for areas to be used for environmental education; (2) parks and camps and users/interpreters--studies dealing with park/camp programs, especially user characteristics and interpretive techniques; (3) media communications--examination of effectiveness of various media; (4) pupil-centered studies--research on attitude change, instructional effectiveness, and learning characteristics; (5) teacher-centered studies--research on teacher/interpreter training, attitudes and behavior; (6) citizen-centered studies--research on attitudes, values, and involvement of citizens in environmental problems; and (7) resources, administration, and others--research on environmental education policy, administration, and philosophy and studies not appropriate for other categories. Title, author, and institutional source for the entire thesis/dissertation collection are provided for each abstract. An alphabetical list by state (including Canada) of institutions offering graduate programs in environmental education and communications is also provided. (Author/JN)

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Prepared for the National Association for Environmental Education
April 1982

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Copies of this volume, the 1978, 1979, 1980, and 1981 volumes are available through: NAEE, P.O. Box 400, Troy, Ohio 45373 for $5.00; or ERIC/SMEAC, Ohio State University, 120 Chambers Road, 3rd Floor, Columbus, Ohio. The 1978 volume is no longer available through ERIC; the 1979 volume is catalogued as SE 029 408.

If you wish to contribute to future publications, please contact Dr. David L. Hanselman, NAEE Thesis Project Director, 311 Marshall Hall, SUNY-CESF, Syracuse, New York 13210.

INTRODUCTION

This publication, Volume V of Recent Master's Thesis Work in Environmental Education and Communications, compiles thesis, doctoral, and major project abstracts. It is a product of the joint efforts of the National Association for Environmental Education, the State University of New York College of Environmental Science and Forestry, and Education Resource Information Clearinghouse.

The 52 abstracts contained in this volume bring to 330 the total of published abstracts recorded by Recent Master's Thesis Work. Most of the citations included in Volume V describe work completed in the 1981-82 academic year, although a few abstracts of earlier work have also been included.

Abstracts included in RMTW publications are organized into seven topic categories: (1) Site Analysis--descriptions and development plans for areas to be used for environmental education; (2) Parks and Camps: Users and Interpreters-- studies dealing with park and camp programs, especially user characteristics and interpretive techniques: (3) Media Communications--examinationsof the effectiveness of various forms of media; (4) Pupil-Centered Studies--research dealing with attitude changes, effectiveness of pedagogical techniques, and learning characteristics of pupils; (5) Teacher-Centered Studies--research focusing on training, attitudes, and behavior of teachers and interpreters; (6) Citizen-Centered Studies--research dealing with the attitudes, values, and involvement of citizens in environmental problems; (7) Resources, Administration, and Others--studies dealing with environmental education policy, administration, and philosophy, as well as some experimental studies which cannot be included in the other categories. We regret that not all abstracts received were appropriate for our publication and therefore could not be included.

Our annual request for abstracts begins in the fall of the year preceding publication. Explanatory letters and printed abstract forms are mailed to approximately 175 graduate departments of environmental education, park administration, natural history interpretation, environmental studies, communications, journalism, and other potentially related fields. This broad coverage is designed to encourage responses from a range of programs in which research related to environmental education and communications is being conducted. We will continue to revise and expand our mailing list in an effort to reach as many institutions as possible.

Volume V of Recent Master's Thesis Work includes a directory of graduate programs in environmental education and communications. This feature was introduced in 1979 at the suggestion of several NAEE members. Our program listing continues to grow and we look forward to improving this resource in future volumes.

The value of a publication like Recent Master's Thesis Work is completely dependent on the support of its readership. The number and scope of annual contributions shapes the publication, and ultimately determines its value as a record of work, trends, and educational opportunities in the field. Those who supervise graduate work in environmental education and communications have an especially important role in producing these volumes. We want to thank them and those who provided us with abstracts and graduate program information for contributing to this year's volume.

Dr. David L. Hanselman
Project Director

Bethel H. Kogut
Editor

1. Site Analysis

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Ecological Analysis and Management Plan for the Salisbury Nature Study Area in Rowan County, North Carolina

AUTHOR: Jeffrey C. Babcock **DATE OF COMPLETION:** May 1981

INSTITUTION: Duke University, Durham, NC 27706

DEPARTMENT / PROGRAM: School of Forestry and Environmental Studies

THESIS ADVISOR: Dr. Curtis J. Richardson

WHERE FULL THESIS IS AVAILABLE: FES Publications Office, address above

This report summarizes ecological data from the Salisbury Nature Study Area (SNSA) in Rowan County, located in the western piedmont area of North Carolina. The data include historical, geologic, topographic, edaphic, hydrologic, soil chemical, water chemical, vegetative, floral and faunal characteristics. The data were used to determine factors controlling the parameters observed, culminating in a quantitative analysis of the ecological value of the various habitats and communities of the SNSA based on sensitivity to disturbance. The ecological value determination was further utilized in the preparation of a management plan for the area.

The author concludes that the SNSA offers excellent education, recreation and research potential that can be realized if proper research is done before development occurs. This goal can be accomplished by communication and agreement among owners, managers, and future developers. It is hoped that this document will illustrate the complexity, specificity, uniqueness and value of the SNSA to stimulate such communication and agreement.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: An Interpretive Prospectus for the Robert Scruggs House, Cowpens National Battlefield, S. C.

AUTHOR: Frederick H. Boyles **DATE OF COMPLETION:** October, 1981

INSTITUTION: Clemson University

DEPARTMENT / PROGRAM: Department of Recreation and Park Administration

THESIS ADVISOR: H. Jesse Grove, Associate Professor

WHERE FULL THESIS IS AVAILABLE: Same as above.

In 1978, the National Park Service opened the Cowpens National Battlefield for visitors. The interpretive efforts of the park staff have been guided by the 1973 interpretive prospectus. The property on which the battle was fought in 1781 has been owned by the Scruggs family since nearly the time of the battle.

In 1828, Robert Scruggs built a modest cabin on his 200 acre battlefield farm that had remained lived in by members of the family until the National Park Service acquired it. The residents of the house greeted many visitors interested in the battle, including the recorded visit of Benson Lossing in 1849.

This prospectus seeks to take the visitor beyond the basic understanding of the Battle of Cowpens and towards a deeper respect for the people whose lives were changed by the Battle. An interpretive theme, sub-themes, and objectives guide the scope of the study.

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Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Mud Mountain Dam Project Resource Management Plan

AUTHOR: Kenneth G. Knouf **DATE OF COMPLETION:** June, 1981

INSTITUTION: Clemson University

DEPARTMENT / PROGRAM: Department of Recreation and Park Administration

THESIS ADVISOR: H. Jesse Grove, Associate Professor

WHERE FULL THESIS IS AVAILABLE: Same as above

Mud Mountain is a Corps of Engineers flood control project. It is located in western Washington on the White River, which is the main tributary of the Puyallup River. Authorized by the Flood Control Act of 1936, the dam protects valuable agricultural and industrial lands along the White and Puyallup Rivers.

The project contains 1,837 acres. During periods of high water, a reservoir is temporarily maintained so as to enable the White River and consequently the Puyallup River to be carefully regulated. As the potential for flooding diminishes, water is released and the reservoir emptied in readiness for future floods. Since there is no permanent reservoir, project lands are used for other purposes, including recreation and wildlife management.

Although the resource management program at Mud Mountain is small compared with areas like nearby Mount Rainier National Park, the need for sensitive, professional management is no less apparent. Prepared under the authority and guidance of the Office of the Chief of Engineers, this paper provides policy, procedures, and recommendations for the management of the project's resource program through Fiscal Year 1986. The Project Resource Management Plan supplements the current Mud Mountain Master Plan and is intended to fill an information void between the Master Plan and the Mud Mountain Operation and Maintenance Manual.

Appendix A concentrates on the public use aspect of resource management and includes sections on recreation facility maintenance, project signing, land use allocations, interpretation, personnel training, visitor assistance, protection of cultural resources, and feasibility of recreation use fees.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: A Framework for Monitoring Recreational Opportunities as a Function of Land Use

AUTHOR: Steven C. Bennett **DATE OF COMPLETION:** 1980

INSTITUTION: University of Minnesota

DEPARTMENT / PROGRAM: Forest Resources

THESIS ADVISOR: Timothy B. Knopp

WHERE FULL THESIS IS AVAILABLE: Library, College of Forestry, Univ. of Minn., St. Paul, MN 55108

All lands provide a recreational environment of some kind, whether as a primary or secondary condition. As the population grows and increasing demands are made upon the land to provide for the populace, the effect of land use on recreational opportunities will need to be considered. To increase the available knowledge for land use managers and decision makers, this study undertakes the development of a systematic approach to identify and classify land use determined recreational environments. At the same time it provides a means to monitor land use changes. It is believed that an enhanced understanding of the land use conditions through an awareness of environments provided, can aid in making land use decisions.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Baseline Floristic Survey: The Yakima Rim Skyline Trail

AUTHOR: Sharon Kay Gordon **DATE OF COMPLETION:** Dec. 1981

INSTITUTION: Central Washington University, Ellensburg, Washington

DEPARTMENT / PROGRAM: Biology

THESIS ADVISOR: Dr. William Barker

WHERE FULL THESIS IS AVAILABLE: Central Washington University Library

The vegetation of the Yakima Rim Skyline Trail was surveyed over a 2-year period to provide baseline floristic data. The species list included 216 plants which are typical of eastern Washington desert and riparian vegetation. Included is information on distribution, relative occurrence, flowering time, and associated vegetation. A trail guide which provides a description of the trail as well as a general geologic history of the Yakima River region is also included. A dichotomous key and description of each plant is included with the intent of providing a layman's guide to the vegetation of the trail.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: The Erie Extension Canal Recreation Area - A Developmental Plan

AUTHOR: James David Bigley Jr. **DATE OF COMPLETION:** Dec. 1981

INSTITUTION: Slippery Rock State College

DEPARTMENT / PROGRAM: Parks and Recreation Dept.

THESIS ADVISOR: Dr. J. W. Shiner

WHERE FULL THESIS IS AVAILABLE: Slippery Rock State College Library

The Erie Extension Canal Recreation Area is comprised of four use areas centered around the canal. Located on the east side of the Shenango River between New Hamburg, Pennsylvania, and the Kidds Mill Covered Bridge, the use areas include: the New Hamburg and Kidds Mill Historic Areas, the Shenango Outdoor Education Center, and the Hempfield Campground. The facilities to be developed in these areas include: buildings, parking areas, comfort stations and hiking trails. The area is rich in history and contains many historic resources. Federal, state and private funding and assistance programs available to the project are included.

2. Parks and Camps: Users and Interpreters

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Familiarity and Adaptation: A Study of Family Attendance at Interpretive Activities.

AUTHOR: Sam H. Ham **DATE OF COMPLETION:** May, 1982

INSTITUTION: University of Idaho

DEPARTMENT / PROGRAM: Department of Wildland Recreation Management

THESIS ADVISOR: Dr. James R. Fazio

WHERE FULL THESIS IS AVAILABLE: University of Idaho Library

This study focused on why some families attend interpretive activities in parks while other families do not attend them. From human ecology, a theory is developed linking families' attendance/nonattendance at interpretive activities with their degree of familiarity with a park. Social learning is seen as an important adaptive mechanism for human populations. Humans rely primarily on the intelligent application of socially transmitted knowledge to adapt to an unusually broad range of environments. In parks, interpretive activities may serve an adaptive function by providing families with useful information about a park's environment. The central proposition is that the less familiar a family is with a park setting, the greater its tendency to seek the information made available at interpretive events.

The broad purposes of this dissertation were to test this hypothesis, and to determine which of five alternative measures of the familiarity construct best discriminates between attending and nonattending families at interpretive events. Prior research suggested family type, stage of family life cycle, and family education level to potentially influence family participation in interpretive events. Consequently, the central hypothesis was retested controlling separately for each of these variables.

The study was conducted in the Lewis and Clark Interpretive Center at Fort Canby State Park in western Washington between June 6 and August 1, 1981. Orientation talks were announced and conducted at randomly selected times throughout the study period. Two hundred and eighty-five attending and 267 nonattending families were interviewed to determine whether attending families were actually less familiar with the park than families not attending the talks. Five different measures of familiarity were taken and data on family type, stage of family life cycle, and family education level were obtained.

Results did not support the central hypothesis. In fact, for four of the five familiarity indicators attending families had greater familiarity than nonattending families. The same results were obtained when family type and life cycle stage were controlled. Education level was found to be related to family attendance at the talks; attending families were more highly educated than nonattending families.

The familiarity indicator best at discriminating between attending and nonattending families was the number of previous interpretive events attended in the past two years. Family education level was found to be a better discriminating variable than four of the five familiarity indicators, the exception being previous attendance. Overall, the discriminating power of all study variables, both alone and in combination was modest. Recommendations for theory and practice are offered.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: The Use of Time by Organized Tour Groups

AUTHOR: Ellen L. Wenderoth **DATE OF COMPLETION:** May 1982

INSTITUTION: University of Idaho

DEPARTMENT / PROGRAM: Wildland Recreation Management (Interpretation option)

THESIS ADVISOR: Dr. Gary E. Machlis

WHERE FULL THESIS IS AVAILABLE: University of Idaho, Dept. of Wildland Rec. Mgt.

Grand Canyon National Park is host to increasing numbers of foreign tourists; especially as members of organized tour groups. The structure of the organized tour group puts unique constraints on the tourists' use of time and space while visiting Grand Canyon. Since many tours are limited to four hours from start to finish, time is a crucial factor. If the interpreter is to successfully reach this important visitor public, he/she must understand the functioning of the organized tour.

In this report, fort, organized tours were studied in detail. The time-budget analysis technique was used to study each tour during their three hour stay at Grand Canyon National Park (the fourth hour was used in transit to and from the park). Observations were systematically recorded and a short survey administered. Major findings included; 1) only about 20% of the tour time was spent at viewing areas along the canyon rim, 2) time spent at viewing areas generally occurred in small segments of ten minutes or less, and 3) statistically significant differences in the use of free time were found between visitors of different cultural groups.

These and other findings seem to imply that a non-personal form of communication (such as written pamphlets) may be the best way to reach this visitor public, and that the special needs of non-American cultural groups should be considered.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: The Urban Environmental Center

AUTHOR: Lori D. Mann & Karen A. Rutledge **DATE OF COMPLETION:** 12/81

INSTITUTION: University of Michigan

DEPARTMENT / PROGRAM: School of Natural Resources, Behavior & Environment Program

THESIS ADVISOR: William B. Stapp

WHERE FULL THESIS IS AVAILABLE: University of Michigan Natural Science Library

This thesis focuses on the Urban Environmental Center, a concept that grew from the nature center movement. Expanding into the urban environment, the Urban Environmental Center would address issues such as energy use, food and nutrition, solid waste disposal, air pollution and transportation.

The process of developing an Urban Environmental Center is explored. Four areas are addressed in detail: organization and management; programming; site and facilities; and funding. In each area, existing approaches are compared and recommendations for success are suggested. In addition, an historical perspective and a process for starting an Urban Environmental Center are presented.

Data for the thesis was gathered from a questionnaire sent to 98 centers and community organizations presently involved in urban programming. In-depth interviews were conducted with staff at fifteen of the organizations. Questionnaire results, interview data, current literature and the authors' ideas are integrated in the text.

This thesis is designed to benefit centers that want to expand their focus to include more urban programming, and individuals or groups interested in starting an Urban Center in their community.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: The Development of Self-guided Materials for a Nature Conservancy Sanctuary

AUTHOR: Beth G. Silverman **DATE OF COMPLETION:** August 1982

INSTITUTION: Cornell University

DEPARTMENT / PROGRAM: Science and Environmental Education

THESIS ADVISOR: Richard B. Fischer

WHERE FULL THESIS IS AVAILABLE: Mann Library, Cornell University

Interpretive activities aim to enrich people's understanding of natural resources through first hand experience in the setting where natural phenomena occur. Self-guided interpretation has the advantages of lov costs no imposed time schedule, and an even distribution of users over time. In this study a series of five self-guided walks were developed for Meyer Preserve, a Nature Conservancy-owned sanctuary in the towns of North Castle and New Castle, Westchester County, New York.

Meyer Preserve's Master Plan calls for interpretation of human and natural history and ecological concepts for the public. The Committee managing Meyer Preserve decided to fulfill the educational objectives stated in the master plan by having self-guided materials developed for the preserve.

A survey of Meyer Preserve users revealed that the average Preserve user is a college-educated adult who has hiked several times at the Preserve during the past two years. Preserve users spend an hour or more on their average visit and are primarily interested in nature study and hiking.

The interpretive brochures were designed to meet the educational objectives stated in the master plan, to be interesting to the average preserve visitor, and to be relevant to the resources at Meyer Preserve. The following topics were selected for interpretation: human history, habitats, a fictional account of life in a hemlock forest, the behavior and ecology of woodpecekers, and Barry Commoner's four laws of ecology.

The brochures were written in several different styles and were printed for distribution. A survey was developed to evaluate the effectiveness of the interpretive mateirals.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: An Organizational Plan for the Development of a Nature Center at Haywood County Hospital, North Carolina

AUTHOR: Judith A. Hutchinson **DATE OF COMPLETION:** Sept. 1981

INSTITUTION: Duke University, Durham, NC 27706

DEPARTMENT / PROGRAM: School of Forestry and Environmental Studies

THESIS ADVISOR: Dr. Curtis J. Richardson

WHERE FULL THESIS IS AVAILABLE: FES Publications Office, address above

This project is an extension of one begun in 1979 to develop a nature trail at a county hospital in western North Carolina, for the purpose of using the natural environment as a component of patient care. This document is intended to guide the hospital advisory committee in the implementation of the trail and other nature programs on a planned time schedule. In addition, it includes a design for a nature center for patients unable to use the trails. Programs are specified for all user groups--patients, hospital personnel, and visitors--and are geared to nature awareness, education, exercise and relaxation.

The author concludes that the nature center will be unique to Haywood County Hospital but will not materialize without the support of the hospital community and the general public. A detailed plan for participation is presented in two phases to involve organized public groups in program development, use, and long-range support.

Environmental Education / Communication Project or Thesis Report Form

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National Association for Environmental Education

TITLE: School Camps and Environmental Education in the Inland Northwest: A Descriptive Analysis

AUTHOR: Randall D. Langseth **DATE OF COMPLETION:** May, 1982

INSTITUTION: University of Idaho

DEPARTMENT / PROGRAM: Department of Wildland Recreation Management

THESIS ADVISOR: Dr. James R. Fazio

WHERE FULL THESIS IS AVAILABLE: University of Idaho Library

In an attempt to help educate young people about environmental problems, several public schools in the Inland Northwest have established school camps. Little information is available about school camps outside the small circle of individuals involved with their development and operations. Therefore, the goal of this study was to provide a descriptive analysis of the similarities and differences that exist at these camps.

A list of 46 schools with camps was generated with 43 responding to a 52-item questionnaire. The five areas of concern which were used as a basis for comparison were: physical and descriptive characteristics, budget and finance methods, administration, educational program, and public relations efforts.

Results indicated that almost 60 percent of the camps were conducted for sixth graders in the spring for a period of five days. They generally utilized facilities owned by government agencies and within easy access to the forest environment. The desert environment, although common in the Inland Northwest, was mentioned only once as a study area.

Most camps remained relatively small with budgets of $5,000 or less, supplied primarily by the local school district, fund drives and student fees.

A basic organizational structure was prevalent in all camps. The number of individuals involved was dependent on the size of the operation.

An original intent in this study was to investigate the role of environmental education in camp programs. However, within the educational program, less than 50 percent of the respondents provided goals and objectives for their camp, indicating a lack of direction in their activities. The major focus of curriculum programs centered around conservation and outdoor skills, neither of which ties strongly into the modern concepts of environmental education. In-service training for an average of eight hours was received by about 60 percent of the respondents. Evaluations occurred in 80 percent of the camps.

School programs or newspapers were the primary means of distributing information and attempting to establish good public relations, important ingredients for program continuation. The final section on opinions allowed respondents to share strengths, areas needing improvements and suggestions for initiating new camps.

3. Media Communications

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Effectiveness of interpretive signs in increasing the environmental knowledge of campers

AUTHOR: Nevin Burt Webster, Jr. **DATE OF COMPLETION:** August, 1981

INSTITUTION: Texas A&M University

DEPARTMENT / PROGRAM: Dept. of Recreation and Parks

THESIS ADVISOR: Dr. John W. Hanna

WHERE FULL THESIS IS AVAILABLE: Dept. Recreation & Parks, Texas A&M University, College Station, TX 77843

Organized youth camps provide settings and opportunities for campers to become familiar with the natural environment. The increase in campers' understanding and appreciation of the out-of-doors is included among many camps operational goals. Accordingly, many camps offer nature lore or similar topics as one of their instructional areas. Yet, these nature programs are not reaching those campers who choose other program activities instead of nature lore.

This study examined the effectiveness of interpretive signs as a supplemental medium which might reach all campers. The criterion for effectiveness was the change in campers' knowledge concerning the natural features which were interpreted. Two moderator variables, participation/nonparticipation in the nature program and indoor/outdoor location of the signs, were also studies to see if they affected interpretive sign effectiveness.

A nonequivalent control group design with pretest-posttest was used in this study. Two-by-two factorial extensions of this design were used to examine each of the moderator variables. Nine, ten, and eleven year old campers from the first and third sessions made up the "control" group, while those from the second and fourth sessions made up the experimental group. Six interpretive signs were prepared, constructed, and then displayed during the experimental sessions, three indoors and three outdoors. Eighteen-question multiple choice pretest and posttests were given at each session to measure campers' change in knowledge. Both descriptive and inferential statistical analysis were run on the campers' scores.

Of the 165 study participants, 143 completed both the pretest and posttest (86.7%). Twenty-three of the 143 participants (16.1%) took part in the nature program. Pretest means for the control and experimental groups were 42.3 and 39.4, respectively. Their posttest means were 44.9 and 50.7, respectively. Mean gain scores, then, were (+)2.6 and (+)11.3, respectively. Medians and ranges supported the trend shown by mean scores that the experimental group's scores increased more than those of the control group.

Hypothesis testing showed that the use of interpretive signs did significantly increase campers' knowledge. Nature program participation and sign location, however, were not significant as moderator variables of sign effectiveness. Although no testing was done to explain why signs were effective, discussion is presented concerning possible factors contributing to interpretive sign effectiveness.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: The effectiveness of a cartoon-illustrated interpretative brochure on the enhancement of campers' knowledge of rules and the decrease in rates of rule violation per campsite

AUTHOR: Thomas P. GALLUP **DATE OF COMPLETION:** March 1981

INSTITUTION: The Pennsylvania State University

DEPARTMENT / PROGRAM: Recreation and Parks Department

THESIS ADVISOR: J. E. Elliott

WHERE FULL THESIS IS AVAILABLE: Interlibrary Loan, Pattee Library, The Pennsylvania State University, University Park, PA, 16802

An interpretive brochure was developed that explained 10 frequently violated campground rules. The brochure explained the rules in a nonthreatening manner by having cartoon characters discuss in dialogue the reason for rule development. The study period ran for 10 weekends in June, July, and August 1980 at Greenwood Furnace State Park, PA. An experimental group (those receiving brochures) and a control group (those receiving no brochures) was established. 154 campers were tested on their knowledge of rules. 80 (50%) were in the experimental group, and 74 (48%) were in the control group. In addition, rule violation rules were established for both groups during the study period. It was found that distributing the brochure sig increased campers' knowledge of the rules. A t-test was used to compare the knowledge of rules test mean score of the 2 groups. It was also found that distributing the brochure did not sig decrease campers' rates of rule violations. An X^2 test was used to examine whether rule violation rates of the 2 groups differed.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Communication Preferences Related to Involvement Levels of Wisconsin Bong Area Pheasant Hunters

AUTHOR: Rebecca Jean Heimark **DATE OF COMPLETION:** 1981

INSTITUTION: University of Wisconsin

DEPARTMENT / PROGRAM:

THESIS ADVISOR: Jerry Karbon

This study attempted to determine some of the relationships between hunters' level of involvement in pheasant hunting and their preferences for sources of hunting information.

A sample of 277 hunters using the Bong Memorial Recreational Area in the fall of 1979 was surveyed with a mail questionnaire.

"Involvement" was determined by an index comprised of six variables. These variables dealt with amount of time hunters spent pheasant hunting and their attachment to the sport. The range of the index was six to 36. The Bong hunter sample involvement score averaged 21.89.

Involvement scores were correlated with the hunters' preferences for sources of hunting information. Overall, the hunters preferred and used interpersonal and topic-related sources rather than the general mass media for hunting information. More-involved hunters preferred the Conservation Congress and DNR employees for hunting information. They also preferred some topic-related media, such as state-based outdoor magazines.

Less-involved hunters showed greater preference for hunting companions, other hunters and general mass media for hunting information.

More-involved hunters had stronger ties with the DNR. They called the DNR for hunting information and to make suggestions and complaints. They also expressed feelings about their hunting experiences to the Conservation Congress and DNR employees. Less-involved hunters expressed feelings to hunting companions. The more-involved hunters attended the Conservation Congress more often than did the less-involved hunters, who rarely or never attended.

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Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: A Consumer-Oriented Approach to Interpretive Program Planning for Birding

AUTHOR: William Joseph Hobson, Jr. **DATE OF COMPLETION:** May, 1982

INSTITUTION: Texas A&M University

DEPARTMENT / PROGRAM: Department of Recreation and Parks

THESIS ADVISOR: Dr. John W. Hanna

WHERE FULL THESIS IS AVAILABLE: Dept. of Recreation and Parks, Texas A&M University College Station, TX 77843

Interpretive planning has traditionally focused on the resource base first, developed program objectives next, then decided the media to present this information to the public. This present study examines an alternate method of planning; namely, consulting the visitor first, then analyzing the resource base and combining these data bases to develop programs.

Birders (bird watchers) were chosen as the study group and were surveyed using a mailed questionnaire. These questionnaires were sent to members of the Dallas and Travis County Audubon Societies on a random basis. These questionnaires requested information regarding preferences for services, facilities, and publications. Also, the questionnaires included items regarding birding experience, which were tested for their moderating effect on preferences.

Data from these questionnaires were analyzed through factor analysis and analysis of varience. Factor analysis was used to determine groupings of programs. The analysis of varience was used to test the moderating effect of experience. This analysis technique yielded seven factors, two of which showed statistically significant differences between experience levels. These factors were the Basics factor (trails, checklist, and checklist + habitat) and the Facility factor (trails, blinds, feeders, and sighting log).

As a result of this study, it was concluded that birders could identify their interpretive program preferences and that experience had a moderating effect on the preferences for the Basics and Facility factors.

This study supports the contention that a more direct method of obtaining information from visitors is needed. These results were counter to intuition, implying that more than experience alone is needed for planning.

Implications are presented to highlight some of the uses of the results of this study. Also, areas for future research are presented.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Guidelines in trail signing

AUTHOR: Carl Dixon SHERMAN **DATE OF COMPLETION:** November 1981

INSTITUTION: The Pennsylvania State University

DEPARTMENT / PROGRAM: Recreation and Parks Department

THESIS ADVISOR: M. L. Christiansen

WHERE FULL THESIS IS AVAILABLE: Lawther Reading Room, White Building, The Pennsylvania State University, University Park, PA, 16802

This paper reviews techniques which help to increase the effectiveness (legibility and/or visibility) of the placement and location of signs, sign design, and message design. A section on Placement and Location of Signs contains information concerning natural lines of vision, sign positioning, and arrangement. Sign Design describes sign shapes and the use of color as an attractor. Message Design discusses such topics as positive and negative wording, interline word and letter spacing, use of upper and lower case lettering and choice of letter styles, as well as message length and margins. The guidelines are equally applicable to hiking, bicycle, snowmobile, motorcycle, and cross-country ski trail signs.

4. Pupil-Centered Studies

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: CHANGES IN STUDENTS' ATTITUDES TOWARDS CONSERVATION RESULTING FROM OUTDOOR EDUCATION: A CASE STUDY

AUTHOR: Joseph K. Tufuor **DATE OF COMPLETION:** November 1981

INSTITUTION: University of British Columbia

DEPARTMENT / PROGRAM: Department of Mathematics and Science Education

THESIS ADVISOR: Dr. C.J. Anastasiou

WHERE FULL THESIS IS AVAILABLE: Main Library, University of British Columbia

In schools, enhancement of students' attitudes towards conservation of the environment and its resources is one of the most prevalent goals of outdoor education programs. It has been assumed by outdoor educators, that a positive change in the attitudes of students will be translated into the corresponding change in their behavior.

Even though some studies have been undertaken to find out if outdoor education programs result in enhancing students' attitudes, the results have not been very conclusive. In addition, no studies have been undertaken to find out if the change in attitudes resulting from these outdoor education programs lead to a corresponding change in behaviors, and no studies have been undertaken to find out the aspects of the programs which attribute to the positive change in attitudes.

This study investigated the nature of the change in attitude resulting from a residential outdoor education program, and the aspects of the program which contributed to or appeared to have contributed to the change in attitudes. The study restricted itself to conservation of three natural resources -- energy, plants, and wildlife.

An attitude questionnaire was developed, tried and used to assess the nature of the change in students' conservation attitudes following a residential outdoor education program. A triangulated case study approach using the views of students, counsellors, teachers and the writer, was used to investigate factors which were considered to have enhanced the students' conservation attitudes.

The results of the attitude assessment study showed that the program enhanced the students' conservation attitudes. The results further showed that in the area of energy and plant conservation the positive change in attitudes was reflected in the students' behavior. In the area of wildlife conservation, however, the behavior of the students did not reflect a positive change in attitude, but this has to be interpreted with caution, since students had not been exposed to situations where they could practice wildlife conservation.

The results of the case study revealed that eight aspects of the program contributed or appear to have contributed to the positive change in students' conservation attitudes. These aspects are the pre-camp preparations, the field study sessions, the outdoor school environment, the attitudes and behaviors of both the teachers and the counsellors, the films shown at the outdoor school, the teaching strategies used, the individual attention received, and the post-camp activities.

The findings of the study led to two conclusions:

(1) That residential outdoor education programs can and do enhance students' attitudes toward conservation of natural resources.

(2) That many aspects of an outdoor education program contribute to or appear to contribute to enhancement of students' attitudes toward conservation of natural resources.

The generalization of the conclusions, however, have some limitations: subjects were not selected randomly, and also because of the presence of the writer during the period of the study.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: THE EFFECTS OF TEACHING CONSERVATION OF RESOURCES TO PRIMARY AGE CHILDREN

AUTHOR: Evelyn Cormier **DATE OF COMPLETION:** May, 1981

INSTITUTION: California State University, Hayward

DEPARTMENT / PROGRAM: Teacher Education

THESIS ADVISOR: Esther Railton

WHERE FULL THESIS IS AVAILABLE: Library and Teacher Education Department At CSUH

The primary purposes of this study were to determine whether young primary age children could be taught conservation of resources, and whether they would reveal in their behavior positive values toward conservation of resources, having been taught such a lesson.

A pre- and posttest Individual Interview Questionnaire was administered to determine the degree of learning of the lesson. An Environmental Behavior Response Survey was administered to determine whether the children demonstrated positive values toward conservation in their observed behavior. In addition, the class was observed over a five-day period during the lesson time and at greater length on two of the days. The observations were also tape recorded to provide greater reliability. All of these were later analyzed for evidence of conservation behavior.

The results obtained on the four antilitter conservation of resources questions on the questionnaire indicated that children could be taught conservation of resources substantiated by the gains made on the posttests as compared to scores obtained from the pretests.

Results from the survey indicated that the children taught the antilittering conservation of resources lesson did demonstrate positive conservation of resources behavior, both specifically related to anti-litter and general conservation behavior. The analysis of the observations and the taped transcriptions of the observations supported the data obtained from the survey.

The limited response to the request for contact with primary teachers teaching conservation of resources in the school district indicates a need for both teacher training and curriculum development in environmental education at the primary level.

Due to the limited amount of research related to conservation of resources and valuing processes in relation to young children, more studies in these two areas appear indicated, and these two subjects need to be taught to primary teachers as well.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Development and Evaluation of an Environmental Education Curriculum

AUTHOR: Deborah A. Simmons & Christine McElroy **DATE OF COMPLETION:** December 1977

INSTITUTION: Humboldt State University Arcata, California

DEPARTMENT / PROGRAM: School of Natural Resources

THESIS ADVISOR: Dr. Rudolph Becking

WHERE FULL THESIS IS AVAILABLE: Humboldt State University Library

An environmental education curriculum was developed and evaluated for the fifth grade. Using a pretest/posttest study design, the experimental group that participated in the study curriculum, the comparison group that received materials from the Humboldt County "Green Box" curriculum, and the control group that received no environmental education instruction were evaluated as to their attitudes, knowledge, and behavior towards the natural environment. With the exception of the cognitive measure, no significant differences were found.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: The Effectiveness of an Outdoor Resident Living Experience on Attitude Change of Upper Elementary Grade Level Students in the Area of Environmental Education

AUTHOR: John T. Conroy **DATE OF COMPLETION:** 1982

INSTITUTION: Slippery Rock State College

DEPARTMENT / PROGRAM: Parks, Recreation & Environmental Education

THESIS ADVISOR: Dr. Craig Chase

WHERE FULL THESIS IS AVAILABLE: Slippery Rock State College, PA

The study investigated the effects (social, physical, and group living) of a three day resident outdoor living experience on the attitudes toward the environment held by upper elementary grade level students as measured by pre- and post-testing. The data collected after the administration of the tests was analyzed by the tabulation of the responses to each question. A "Likert Scale" was used to design the test instruments. Implications were then drawn pertaining to the value of resident camp experiences and the effect they have on the formation of attitudes of upper elementary grade level students. Of the eight groups tested, seven were found to have a significant positive attitude change at the .05 level of significance. A total of seven school districts from western Pennsylvania were used in the testing which took place at the Ivan McKeever Environmental Learning Center located in Sandy Lake, Pennsylvania. The study included the testing of 528 students who participated in a three-day resident camp at the Center during the fall of 1981. The procedures involved in the determination of attitude change consisted of the following: a pre- and post-program attitude test and a teacher and parent evaluation survey of the program. Sample questionnaires and a sample program format are in the appendices. and recommendations for future study are stated. A "t-Test for Dependent Samples (t/DEP) was used to compute the means for each set of scores and the mean difference between the two sets of scores of the pre- and post-tests for each group. Analysis of Covariance: One way Classification (ANOCOV) with one covariate was used to determine whether there were significant differences among the mean scores of each of the experimental groups. The comparison ao all groups using this method indicated only one group's scores were significantly different from all others.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: A STUDY OF THE CONTENT OF POPULATION EDUCATION IN THE UNITED STATES

AUTHOR: Arti Laroia **DATE OF COMPLETION:** May, 1982

INSTITUTION: California State University, Hayward

DEPARTMENT / PROGRAM: Education

THESIS ADVISOR: Esther P. Railton, Ed. D.

WHERE FULL THESIS IS AVAILABLE: CSUH Library, 94542

The world today is facing a population crisis. The rapid growth of population is responsible for the imbalance between population, resources, and the environment. The result has a detrimental effect on the quality of life.

This thesis presents a study of the content of population education. In addition, it provides a history of population education in the United States, as well as approaches, goals and objectives of population education with applications for India which is the second most populous country in the world. Furthermore, the study enumerates the population problems and the consequences of overpopulation in India. Activities and curriculum materials are discussed which, according to the author's judgment, should be useful for the teaching of population education in the secondary schools of India.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: A Comparison of Environmental Attitudes Among International and American Students Studying in the United States

AUTHOR: Sanghoon Lee **DATE OF COMPLETION:** May, 1982

INSTITUTION: SUNY College of Environmental Science and Forestry

DEPARTMENT / PROGRAM: Graduate Program in Environmental Science

THESIS ADVISOR: Dr. David L. Hanselman

WHERE FULL THESIS IS AVAILABLE: Moon Library, SUNY College of ESF, Syracuse, NY 13210

The purpose of this study was to compare the environmental attitudes of 255 college students in six universities throughout the United States. The respondents were from 12 countries which were selected according to the level of economic development, and were grouped into three categories: developed, developing, and underdeveloped countries.

GNP per capita was assumed to be the principal criterion to explain the differences in environmental attitudes. But it was found that GNP alone is not an adequate yardstick for the comparison. Other country-specific factors such as economic growth rate, population density, structure of economy, urban-rural population distribution, etc. deserve more attention in understanding the international differences in environmental attitudes.

The major findings of this study show that there is a significant difference in environmental attitudes between developing and underdeveloped countries, but no significant difference between developing and developed countries in such aspects as the degree of concern about air pollution and water pollution, valuing environmental protection as much as economic development, and willingness to pay for pollution. These results indicate that the pro-environmental attitudes among the respondents from developing countries are as high as those from developed countries.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: INDUSTRIAL ARTS ACTIVITIES FOR NATURE TRAIL CONSTRUCTION

AUTHOR: Michael P. Schlein **DATE OF COMPLETION:** Dec. 4, 1980

INSTITUTION: California State University, Hayward

DEPARTMENT / PROGRAM: Master of Science in Education- Environmental Ed.

THESIS ADVISOR: Esther P. Railton

WHERE FULL THESIS IS AVAILABLE: California State University, Hayward

The project was the development of activities in the construction of a nature trail near King Estates Junior High School in Oakland, California. The goals of the project were to give the students an appreciation of nature, to provide for active "hands on" experiences with tools, and to develop an understanding of some of the interrelationships of themselves with nature. A brochure was assembled with activities that would enable a teacher to guide students through the construction of a nature trail. The information in the brochure was collected from several sources and was evaluated by Metal Shop and Wood Shop teachers located throughout the state of California who belong to California Industrail Education Association. The results of the evaluation were favorable and helpful.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: A comparative study of the attitudes of fifth and sixth graders in selected outdoor activities

AUTHOR: Cynthia A. Jenkins **DATE OF COMPLETION:**

INSTITUTION: Slippery Rock State College

DEPARTMENT / PROGRAM: Parks and Recreation Department

THESIS ADVISOR: C. C. Chase, Ph.D

WHERE FULL THESIS IS AVAILABLE:

This study attempted to assess the change in attitude of fifth and sixth grade students toward the outdoors as a result of a three day campout experience. The effectiveness of a camping experience in increasing environmental awareness, sociableness and responsibility was measured and analyzed. Subjects for this study were randomly selected fifth and sixth graders enrolled at Hempfield Area School District. One hundred were fifth and sixth graders who participated in selected outdoor activities at a three day campout at Twin Lakes, and one hundred were fifth and sixth graders who did not participate in the three day campout. The Millward questionnaire was administered to both groups. The fifth and sixth graders in the Hempfield Area School District who participated in the three day campout at Twin Lakes held a positive attitude toward outdoor activities. No significant difference was found between the attitudes of fifth and sixth graders toward outdoor activities.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Environmental Education through Use of Children's Literature in the Primary Grades

AUTHOR: Gayle D. Prager **DATE OF COMPLETION:** November, 1981

INSTITUTION: California State University, Hayward

DEPARTMENT / PROGRAM: Teacher Education, curriculum option, specialization in environmental education.

THESIS ADVISOR: Dr. Evelyn Belgum

WHERE FULL THESIS IS AVAILABLE: California State University, Hayward: Main Library, McHugh Reading Center, Environmental Education Lab.

The purpose of this study was to determine how children's literature could be used to implement environmental education in the primary grades. An annotated bibliography of seventy-eight titles was compiled. The themes of these books were matched with environmental concepts from the State of California Curriculum Guide for Environmental Education (Spring, 1981, draft). The appropriateness of the match was judged by a panel of ten educators. Fifty of the seventy-eight titles were rated by at least four judges, a requirement of the study. On a scale of 0 to 3, an average rating of 2.0 was necessary for a concept to be considered validly matched to a book. Only two of the fifty titles were eliminated for failure to meet this rating. No conclusions can be drawn under the terms of this study concerning the twenty-eight books that were judged by three or fewer judges. The study provided a means for teaching environmental education using materials that are generally present in the classroom. It added a new dimension to their use without adding another area of curriculum.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Teaching Outdoor Science and Environmental Education Using the Station Approach.

AUTHOR: Mike Schneider **DATE OF COMPLETION:** 1981

INSTITUTION: Southern Illinois University at Edwardsville

DEPARTMENT / PROGRAM: M.S. in Environmental Studies (interdisciplinary)

THESIS ADVISOR: Dr. Robert A. Williams

WHERE FULL THESIS IS AVAILABLE: Office of Envir. Studies, S.I.U.Edwardsville, IL 62026

The goal of this research report is to provide a fundamental procedure for building an outdoor environmental laboratory, for use at both the elementary and junior high school levels. All the steps in the lab development process are covered. This paper focuses primarily on gaining of approval, the construction plan, and the station guide. The report presents a clear and precise way of accomplishing the listed tasks in a manner suitable for a school with a limited budget, a small area with which to work, and/or a teacher with limited construction skills. Through implementation of this plan, an outdoor laboratory can be developed with relatively simple materials and with student involvement in the construction and use.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: The Development of Instructional Materials for Teaching About Selected Northeast Wisconsin Game Birds and Their Habitat to Elementary Students Utilizing a Natural Area.

AUTHOR: Joann M. Schmitt & Henry J. Schmitt **DATE OF COMPLETION:** May 1979

INSTITUTION: University of Wisconsin - Green Bay

DEPARTMENT / PROGRAM: Education/Master of Environmental Arts & Sciences

THESIS ADVISOR: Dr. James Busch

WHERE FULL THESIS IS AVAILABLE: University of Wisconsin - Green Bay

Concern for habitat preservation and management is facilitated through the use of the instructional program for teaching about selected game birds and their habitat to elementary students. The thesis presents literature on habitat preservation and an instructional program for teaching about ruffed grouse, pheasant, partridge and habitat. Wise use of habitat and awareness of the need to preserve habitat are educational objectives of the instructional program for elementary students.

Unit design, concepts and objectives, time elements, lessons and activities, teacher resources and field activity evaluation are included in the program. The lessons and activities in the thesis provide for classroom preparation, outdoor activities to be used in a natural area and activities and evaluation for students and teachers to be used after the outdoor program experience. Through the instructional program information is presented on identifying the game birds, common characteristics, breeding and nesting, tracking, identifying game bird habitat, food, causes of loss of habitat and means to maintain habitat. The instructional program encourages students to continue to meet the need of habitat preservation and is provided for use in the classroom and natural areas.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: AN ENVIRONMENTAL CURRICULUM GUIDE EMPHASIZING CHILDREN'S LITERATURE AND ART, K-3

AUTHOR: Keiko Koshi Aresh

DATE OF COMPLETION: March, 1980

INSTITUTION: California State University, Hayward

DEPARTMENT / PROGRAM: Department of Teacher Education/ Environmental Education

THESIS ADVISOR: Dr. Esther Railton

WHERE FULL THESIS IS AVAILABLE: California State University, Hayward Library

The purpose of this study was to provide an environmental education curriculum resource guide for primary grade teachers which emphasizes the teaching of three environmental education concepts through children's literature and art. Environmental problems cannot be neglected in man's daily life. Children must learn to be aware of and appreciate the environment from early childhood. An environmental education curriculum which emphasizes the environmental education concepts and the integration of environmental education with other subjects should be developed for young children. The combination of children's literature and art was considered to be an effective means in the development of an environmental education curriculum.

For the development of an environmental education curriculum resource guide, three environmental education concepts were considered fundamental and significant to be conveyed to youngsters. (1) Living things are interdependent with one another and their environment. (2) Living things or populations of living things are the product of their heredity and their environment. (3) Living things and their environment are in constant change.

To teach the three concepts, the objectives for each concept were made. According to the objectives, the children's books listed in the guide were selected. Based on the children's books, the art and science activities were chosen. Most of the children's story books were chosen from California State University, Hayward Library.

In order to determine the effectiveness of the environmental education curriculum resource guide, a copy of the guide and a questionnaire were sent to seven individuals who teach or have taught primary grades. A fourth grade teacher, who previously had taught kindergartners and primary grade children, was interviewed about the effectiveness of the guide. Nine of the activities had been field tested by her in her fourth grade class.

The results from the evaluation of the guide indicated that children's literature and art activities can be effective in teaching the three environmental education concepts to children. Children's literature and art appeared to be easily integrated with other subjects. The activities developed for the children's books and art could appeal to primary grade children. The environmental education resource guide could be used by primary grade teachers in environmental education programs.

The study showed how children's literature and related art activities can be used to develop environmental education concepts in young children. Children's literature and art could arouse children's interest in learning the environmental education concepts and develop their awareness, appreciation and understanding of their environment. Children's literature and art would be utilized as an integrative curriculum-spanning approach to concept formation.

5. Teacher-Centered Studies

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: DEVELOPMENTAL VARIABLES AFFECTING ENVIRONMENTAL SENSITIVITY IN PROFESSIONAL ENVIRONMENTAL EDUCATORS

AUTHOR: Nancy J. Peterson **DATE OF COMPLETION:** 4/22/82

INSTITUTION: Southern Illinois University - Carbondale

DEPARTMENT / PROGRAM: Environmental Education/Curr., Instr., & Media

THESIS ADVISOR: Harold R. Hungerford

WHERE FULL THESIS IS AVAILABLE: Morris Library - Southern Illinois University

The purpose of this study was to investigate and attempt to isolate those variables which are perceived by professional environmental educators as being of prime importance in developing their own environmental sensitivity (ES). The study was initiated in 1979 and subsequently involved interviewing twenty-two (22) North American environmental educators. The personal interview format was chosen after two pilot studies. Each interview lasted approximately one hour.

Both primary and ancillary sensitivity data were obtained during the interview session. These data were used along with demographic information in order to construct a generalizable sensitivity profile for environmental educators. It was hoped that this sensitivity profile, in turn, could be used to identify discrete predictor variables for the early development of environmental sensitivity.

A number of predictor variables were identified for environmental sensitivity development. They may be summarized as follows:

1. Major factors and/or experiences leading to ES were of a continuous nature or long-term and are neither episodic or sporadic.
2. Activities such as exploring/playing in the out-of-doors as a child, hunting and fishing, and involvement in youth organizations or group camping were important for ES development.
3. Frequent visits to natural areas or open spaces were critical for ES development.
4. Role models, both familial and non-familial were instrumental in the development of ES.
5. Familial sensitivity (to the environment) was viewed as an important contributing ES variable.
6. In almost all instances, contributing ES variables were positive ones and occurred during the first eighteen years of life.

If these findings are generalizable beyond the sampled population, some interesting educational implications appear. Some of these would be:

1. Environmental education programs may be more effective if they are conducted on a continuous basis. Involvement in short-term EE programs appears to have limited impact on ES development.
2. To gain the greatest degree of sensitivity, EE programs should begin working with participants at a young age.
3. Frequent contact with natural areas or open spaces seems to be necessary for ES development.
4. Role models appear to be crucial in the development of ES. Programs should provide exposure to environmentally concerned and active individuals.
5. For some participants in this study, degradation of familiar areas had a profound affect on their sensitivity. Therefore, it might appear important to focus the EE program on local issues and problems rather than on issues outside the community or region.

Environmental Education / Communication Project or Thesis Report Form

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National Association for Environmental Education

TITLE: A Study of Teacher-Sponsored Environmental Education Inservice Workshops

AUTHOR: Marlynn Burkhardt Kaake **DATE OF COMPLETION:** April, 1982

INSTITUTION: California State University, Hayward

DEPARTMENT / PROGRAM: Master of Science in Education - Curriculum Program

THESIS ADVISOR: Dr. Esther Railton

WHERE FULL THESIS IS AVAILABLE: Library at California State Univ., Hayward

The solution to little or no interaction between the individual and his environment can be found in education. Both commercial sources and many state and national agencies have produced instructional materials to assist teachers and curriculum workers in teaching about the environment.

This study measured the influence of two teacher-sponsored environmental education inservice workshops on fourth and fifth grade teachers in three elementary schools in the Alameda Unified School District. The workshops were based on programs sponsored by the California Solid Waste Management Board (Wizard of Waste) and the San Francisco Consumer Services Division of Pacific Gas and Electric Company (Power Quiz).

Formative and summative phases of evaluation were used by means of pre-questionnaires, workshop evaluations, and post-questionnaires to assess two, two hour workshops.

The results of this study indicated fifty percent of the workshop participants did include the inservice program in their classrooms within the school year and another twenty-five percent planned to include the program in their curriculum the following year. The hypothesis for this thesis was supported. Teacher-sponsored inservice workshops are an effective method of introducing environmental education into the curriculum.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Environmental Lessons for Substitute Teachers

AUTHOR: Mary C. Cedarholm **DATE OF COMPLETION:** 6-11-81

INSTITUTION: California State University, Hayward

DEPARTMENT / PROGRAM: Department of Education

THESIS ADVISOR: Esther Railton

WHERE FULL THESIS IS AVAILABLE: California State University, Hayward

The purpose of this study is to investigate the adequacy of environmental lessons for substitute teaching presentation.

A background literature search is pursued for (1) state, county and district expectations of substitute teacher performance; (2) lesson plans now available for substitute teaching; and (3) cultural expectations of environmental education.

Factors and practices which can affect the success of the lessons are considered. For special lessons relative to the environment, specific approaches, fillers, and subject area activities have been selected or devised to facilitate this investigation. Environmental, regular classroom, and substitute teacher opinion rating of the suggested material provides an evaluative measure.

Environmental lessons provide an effective tool to meet the needs of a substitute teacher. Since these lessons are not usually taught as a part of the regular program, it is a premise of this study that their uniqueness will promote and motivate learning.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Volunteer staff training programs in interpretive centers

AUTHOR: Barbara A. MIDDLETON **DATE OF COMPLETION:** August 1981

INSTITUTION: The Pennsylvania State University

DEPARTMENT / PROGRAM: Recreation and Parks Department

THESIS ADVISOR: J. E. Elliott

WHERE FULL THESIS IS AVAILABLE: Interlibrary Loan, Pattee Library, The Pennsylvania State University, University Park, PA, 16802

A variety of interpretive centers were surveyed to examine their policies and procedures relating to volunteers in teaching positions. The questionnaire was designed to survey a variety of interpretive centers to ascertain: (1) reliance on volunteer personnel; (2) extent of volunteer training programs offered; (3) specific content areas offered in volunteer training programs; (4) priorities of volunteer training programs and training manuals; and (5) environmental conditions affecting training program formats and regular center programs. The study group consisted of 86 interpretive centers divided into three study subgroups: 21 zoos, 48 nature centers, and 17 musants. It was found that the number of volunteers in teaching positions as well as their responsibilities have increased in the past 5 years, with volunteers outnumbering paid staff in most interpretive centers. Most centers prefer to have paid staff members responsible for training volunteers, and sponsor their own mandatory training program. Oral skills and knowledge of natural science are the highest priorities in these training programs. Respondents feel that their programs would be able to continue with severe financial cutbacks although training programs would be greatly restricted.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: CHANGES IN STUDENT-TEACHER PERCEPTIONS FOLLOWING A RESIDENTIAL OUTDOOR PROGRAM

AUTHOR: DAVID JOHN BATESON **DATE OF COMPLETION:** May 1981

INSTITUTION: University of British Columbia

DEPARTMENT / PROGRAM: Department of Mathematics and Science Education

THESIS ADVISOR: Dr. W. Boldt

WHERE FULL THESIS IS AVAILABLE: Main Library, University of British Columbia

Positive changes in student-teacher relationships have long been postulated to be one of the desirable outcomes of Residential Outdoor Programs. This study examines changes of students' perceptions of their teachers as well as changes in teachers' perceptions of individual student personalities and interpersonal relationships within their classes following a Residential Outdoor Program.

A detailed description of the actual Residential Outdoor Program examined in the study is presented. The program was evaluated in terms of predefined criteria for conducting a program effecting positive student-teacher relationships. The Program was judged to have met these criteria.

Using pre-program and post-program scores from the Teacher Pupil Relationship Inventory, students participating in a Residential Outdoor Program were found to have changed their perceptions of their teachers in a positive direction when compared to students who had not participated in such a program.

Teachers participating in the Residential Outdoor Program provided the information required for Bales Interaction Process Analysis. Using this information, the teachers were found to have changed their perceptions of some individual student personalities following the Residential Outdoor Program. Although no commonalities were found in these perception changes, the individual perception shifts were documented and interpreted.

Following the Residential Outdoor Program, it was inferred that the teachers perceived the interpersonal relationships within the classes to be more unified than had been the case prior to the Residential Outdoor Program. Isolated individuals and groups within the classes were perceived to have been drawn into the main relationship networks of the classes following the Residential Outdoor Program.

Environmental Education / Communication
Project or Thesis Report Form

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National Association for Environmental Education

TITLE: Toward a Comprehensive Strategy for Environmental Values Education

AUTHOR: Micahel J, Caduto **DATE OF COMPLETION:** June 1981

INSTITUTION: University of Michigan - Ann Arbor

DEPARTMENT / PROGRAM: School of Natural Resources / Behav. & Environ. Prog

THESIS ADVISOR: Dr. William B. Stapp

WHERE FULL THESIS IS AVAILABLE: Dept. Office; Natural Science Library.

Unsound environmental values and behavior are a major cause of environmental problems. There are, however, basic, ideal values inherent in American society which have a philosophical grounding in 25 centuries of human reflection. A relatively recent concept is the value of an environmental ethic. These values are objective entities that can be taught.

Environmental values education (EVE) is plagued by many of the problems found in general values education — among these is lack of an overall, comprehensive strategy for environmental values education. There are eight major values education strategies available to environmental educators: laissez faire, inculcation, moral development, values analysis, values clarification, action learning, confluent education and behavior modification. These strategies, and the methods used to implement them, can be combined, where appropriate, so that their strengths are complementary.

It is suggested that moral development theory is capable of providing a framework on which to build a comprehensive environmental values education strategy. Individuals experience two major periods of moral development, that of moral heteronomy (up until the age of 11-12 years) and moral autonomy. In morally heteronomous individuals EVE should consist of helping learners to form a positive personal system of social and environmental values and ethics. In morally autonomous individuals EVE should strive to increase self-awareness of values and behavior and how these compare to those that are most beneficial to social and environmental welfare. Moral development needs to be fostered throughout EVE. Strategies in EVE should always be suited to the learner's level of cognitive and moral development.

Environmental educators need a strong background in the philosophy of values and the dynamics of valuational and behavioral formation and change within the individual. This is necessary if they are to be successful in understanding, influencing and evaluating positive social and environmental values and behavior. Communication skills are also essential to effectiveness in EVE. A strong background in the theory and practise of EVE strategies must also be acquired. Environmental educators must be proficient in choosing and implementing EVE strategies and methods that are most appropriate to the teacher's own background, educational setting, the needs of the teacher and learners, the educational organization's policy and community attitudes towards EVE, and the learner's level of cognitive and moral reasoning powers. Teachers must strike a personal balance between their own strength of conviction towards EVE and the restrictions placed upon them by educational policies and parental and community attitudes towards EVE.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: WINTER - A STATE OF MIND

AUTHOR: Michael L. Madden **DATE OF COMPLETION:** 8-1981

INSTITUTION: University of Wisconsin - Green Bay

DEPARTMENT / PROGRAM: Master of Environmental Arts and Sciences

THESIS ADVISOR: James Busch

WHERE FULL THESIS IS AVAILABLE: University of Wisconsin - Green Bay

Parents notice their children spend more time in front of the television, teachers find more students want to stay in at recess, more cars are parked in front of bars, and people are putting on extra pounds. Yes, it's that annual slow down, fatten-up, boring time of the year, WINTER.

One of the definitions in Webster's Seventh New Collegiate Dictionary for winter is "a period of inactivity or decay." What appears to almost be a species wide metabolic change can be thought of as the state of mind connected with that last season of the year, winter.

Education today deals with more that the "three R's." Values and attitude directives can be found in most educators' philosophical statements, but educators and the educational field have generally overlooked winter as a viable subject for attitude development of outdoor education.

The fact that education dealing with winter recreation has been lax is illustrated by the state of mind most people associate with winter. Education has not offered alternatives suitable for lifelong participation or that promote physical or mental well-being. Most physical education curricula of elementary schools have not provided experiences that offer carry over in the home situation during winter.

The exaggerated zeal or fad of snowmobiling in the late 60's and early 70's should have awakened educators to the fact that they have not offered much in the way of alternative winter recreation. More and varied winter activities are being opened to adults; but to elementary students, such as the fifth graders this project is directed toward, the choices are few.

Can education be successful at creating a more positive state of mind toward winter leisure time activity? Can attitudes toward recreation and the out-of-doors be influenced? What types of activities or lessons can an educator use to promote a more positive and environmentally conscious attitude toward winter? This thesis is an endeavor to answer these questions.

Included in the thesis is a curriculum presented in usable lesson plan form and several evaluation tools. Among the 28 lessons are aesthetic appreciation, survival training, snowshoe lessons and nature study. The lessons were designed for middle school students but would be applicable introductory lessons to any age group.

Evaluation instruments such as leisure time and personal preference inventories, suggest a recognizable change in student leisure preference. Evaluation done a year or two after the curriculum presentation show distinguishable carry over of leisure instruction.

The thesis has received awards from the Wisconsin Environmental Education Association and the Door County Soil and Water Conservation District for its unique contribution to environmental education.

6. Citizen-Centered Studies

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: ELITISM AND THE ENVIRONMENTAL MOVEMENT

AUTHOR: BARRY INGBER DATE OF COMPLETION: May, 1982

INSTITUTION: Cornell University

DEPARTMENT / PROGRAM: Education / Environmental Education

THESIS ADVISOR: Dr. Richard B. Fischer

WHERE FULL THESIS IS AVAILABLE: Cornell University Libraries

This thesis examines the environmental movement as a social justice movement. It seeks to determine whether the movement is elitist or not, whether this inclination is inherent or a matter of choice, and what can be done to make environmentalism an anti-elitist force. The report is based on published literature and closely examines three instances of environmental controversy.

Part I discusses critiques of the environmental movement in general and identifies four criteria for determining whether a social movement is elitist: composition, ideology, impact, and tactics. It concludes that there is nothing inherently either elitist or anti-elitist about its concerns.

Three case studies comprise Part II. Chapter Two looks at the controversy over plans to build a pumped-storage hydroelectric plant on the Hudson River at Storm King Mountain. This case serves as an example of the conflict between preservation and economic growth. While the motivations for opposing the plant were not generally concerned with social justice questions, the plant itself would have benefited an elite -- Con Edison -- at the possible expense of Cornwall property owners, fishermen, and New York City residents of all social classes.

Chapter Three examines the debate over planned construction of a mobile, land-based nuclear missile system, the MX, in the Great Basin. The MX exemplifies the theme of war as an environmental issue. Though environmentalists failed to look beyond the immediate environmental impacts of the project, the plan itself is found to be highly inequitable in every respect and the opposition to be non-elitist.

The leakage from a chemical dump at Love Canal in Niagara Falls, New York, as an example of a pollution problem, is the subject of Chapter Four. The residents of the affected community are seen as innocent victims of the activities of all levels of government and the Hooker Chemical and Plastics Corporation. Their cause and their grassroots activism are patently anti-elitist. Like the other two case studies, this one demonstrates environmental problems as results of the differential apportionment of costs and benefits of social decisions. Government complicity was found in all three case studies.

Part III recommends an alternative to the environmental education and environmental advocacy approaches usually adopted by environmentalists. It finds more potential for progressive social and environmental change in a community-based education that would foster critical thinking in its subjects and actively oppose elitism.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: An Investigation into Environmental Activism

AUTHOR: Mark A. Larson DATE OF COMPLETION: 1980

INSTITUTION: The University of Wisconsin - Madison

DEPARTMENT / PROGRAM:

THESIS ADVISOR: Lloyd R. Bostian

WHERE FULL THESIS IS AVAILABLE: Same as Above

A systematic review of the empirical generalizations in the environmental literature revealed a wide range of findings in terms of relationships between environmental concern and activism and communication, social, demographic and psychological variables. Since little attention had been given to the methodology of replication to verify these empirical generalisations, the goal of this research was to test the soundness of the empirical generalizations in the environmental literature by attempting to replicate previously identified relationships between environmental activism and communication, social, demographic and psychological variables.

The research design compared environmentally active respondents to non-active respondents (identified by responses to five behaviorally oriented environmental activism questionnaire items) in a random sample of 548 Wisconsin adults. In addition, a select sample of 164 environmental activists from Madison, Wisconsin was surveyed to permit comparisons between environmental activists in the statewide sample and environmental activists in the select sample, and to permit replication of studies in the environmental literature which used select samples of environmental activists.

Specific findings of the data analysis are as follows:

A positive relationship was found in the statewide sample between environmental activism and reading magazines regularly, wanting to find out more about environmental issues, and reading news magazines and science/technical reports. The select sample of environmental activists also showed high readership of news magazines and science/technical reports, as well as environmental magazines. This evidence tends to replicate previous findings.

Environmental activists in the statewide sample were similar to the non-active respondents in habitual mass-media use and in citing newspapers and television as their most important and influential sources of environmental information; few mentioned television or radio. This latter finding replicates findings from other studies using select samples of environmental activists.

A positive relationship was found between environmental activism and social class and "white-collar" occupation in both samples of environmental activists, which replicates previous findings. Environmental activists in the statewide sample also tended to have lived in large urban areas before the age of 18. No relationship was found between environmental activism and sex of respondent of religious preference.

This research failed to replicate the generalization that environmental activism is related to political-party preference or left-right ideology in the statewide sample, though the select sample of environmental activists was strongly Democratic or Independent and liberal. A positive relationship was found between environmental activism and belonging to community-action and political organizations in both samples.

The environmental activists in the statewide sample tended to disbelieve in the ability of technology to solve environmental problems and to believe in being personally responsible for solving environmental problems. This replicated evidence that how one views the efficacy of ones own actions is related to the liklihood of participation in social activism.

A positive relationship was found between environmental activism and education lefel achieved by respondents, which replicated previous evidence in the environmental literature. No relationship was found between environmental activism and age, though environmental activists were younger (mean age = 40) than non-active respondents (mean age = 47).

The environmental activists did tend to perceive environmental problems as more serious in areas where they lived than non-active persons.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: An assessment of intragroup differences in conservation attitudes and environmentalism, as a function of activity involvement among fly fishermen

AUTHOR: Merrill S. KATZ **DATE OF COMPLETION:** March 1981

INSTITUTION: The Pennsylvania State University

DEPARTMENT / PROGRAM: Recreation and Parks Department

THESIS ADVISOR: B. van der Smissen [Bowling Green State University]

WHERE FULL THESIS IS AVAILABLE: Interlibrary Loan, Pattee Library, The Pennsylvania State University, University Park, PA 16802

This study tested the theory that involvement in and dependency upon natural environments for leisure pursuits results in greater commitment to environment and its protection. 400 predominately male, fly fishermen were surveyed. Ages ranged from 16 to 78, while skill varied from beginner to expert. Individuals were asked to respond to a questionnaire administered through the mail. Attitude structures with respect to wild versus stocked trout, stream habitat, stream channelization, and impoundments were examined. Environmentalism was also assessed. Data gathering was initiated in April 1979 and was completed by December 31, 1979. Univariate frequencies were used to generate descriptive tables, while r was used to define relationships between dependent and independent variables. Mean diffs between fishery conservation attitude scores and environmental scores were tested by t. Multiple ANOVA was used to assess environmental concern and sport fishery conservation attitudes. Environmental scores became more environmentally oriented as activity involvement increased. Orientations to conservation of the sport fishery were higher for anglers at upper levels of activity involvement. Commitment to conservation was stronger for those at upper levels of involvement. There were diffs among fly fishermen in attitudes toward environmental concern and conservation of the sport fishery.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Off-road motorcycle management in Pennsylvania: a preference study of management policy statements for off-road motorcycle use

AUTHOR: Dennis S. RENTSCHLER **DATE OF COMPLETION:** August 1981

INSTITUTION: The Pennsylvania State University

DEPARTMENT / PROGRAM: Recreation and Parks Department

THESIS ADVISOR: M. L. Christiansen

WHERE FULL THESIS IS AVAILABLE: Interlibrary Loan, Pattee Library, The Pennsylvania State University, University Park, PA, 16802

(Citation # if applicable)

To identify a set of off-road motorcycle (ORM) management policy statements which are consensually acceptable to PA public land managers, ORM users, and non-motorized trail users for application in PA, 3 hypotheses were established: (1) ORM users recognize the need for controlled and managed use of ORMs on public lands; (2) preferences of PA land managers, ORM users, and non-motorized recreationists toward acceptable ORM management policy statements presently conflict with one another; and (3) diffs in preferences of acceptable ORM management policy statements between the 3 study groups do not differ to the extent as to preclude development of a consensually acceptable ORM management policy for consistent application in the Commonwealth of PA. A total of 301 mailed questionnaires were sent to public agency land managers, ORM club officers, and non-motorized trail club officers throughout PA. Study conclusions were: (1) ORM users do recognize the need for controlled and managed use of ORMs on public lands; (2) while land managers, ORM users, and non-motorized trail users do conflict with respect to several aspects of ORM management policy, the extent of this conflict is far less than originally anticipated; and (3) the extent of disagreement between the study groups does not preclude establishment of a consensually acceptable ORM management policy for PA.

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Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Environmental Literacy Training for Citizen Groups

AUTHOR: Bruce D. Sullivan **DATE OF COMPLETION:** August 1981

INSTITUTION: Univeristy of Wisconsin - Stevens Point

DEPARTMENT / PROGRAM: Environmental Education and Interpretation

THESIS ADVISOR: Dr. Richard Wilke

WHERE FULL THESIS IS AVAILABLE: Learning Resources Center, UW-SP, Stevens Point, Wisconsin 54481

An Environmental Literacy Training (ELT) model has been developed, which is based on the "Goals for Curriculum Development in Environmental Education", the characteristics of adults as learners and a problem-solving approach to community issues. In developing this model, goals, guidelines and procedures for an adult EE program model were identified which would facilitate the development of environmentally literate citizens. Primarily, the ELT model provides a framework through which citizen groups may develop an issue oriented EE program that is consistent with its own goals and needs. The ELT model focuses on productive action toward resolving a community environmental issue. The model was designed to accomplish this by providing a step-by-step process which citizen groups could use to design, implement and evaluate a community environmental action project. The components of this model are:

1. Identification of a local environmental issue.
2. Investigation of the issue.
3. Selection of an action project.
4. Design of an action strategy.
5. Design of learning experiences.
   A. Diagnosis of learning needs.
   B. Preparation of learning objectives.
   C. Selection of specific learning experiences.
   D. Development of learning evaluation procedures.
6. Integration of the action strategy and learning experiences.
7. Evaluation of the overall program.

It is hoped that through the use of this program model, citizens could gain the skills and motivation necessary to influence societal decisions to achieve or maintain a high level fo environmental quality.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Public Participation in the Development of Hazardous Waste Management Policy: A Sourcebook for Planning

AUTHOR: Lee A. Krohn and James J. McGough **DATE OF COMPLETION:** May 1981

INSTITUTION: Duke University, Durham, NC 27706

DEPARTMENT / PROGRAM: School of Forestry and Environmental Studies

THESIS ADVISOR: Dr. Gerald R. Stairs and Dr. Curtis J. Richardson

WHERE FULL THESIS IS AVAILABLE: Integrated Case Studies Program, address above

Public opposition to the siting of hazardous waste disposal facilities has been cited as the major impediment to implementation of hazardous waste management policy Increased public participation in the planning of hazardous waste management policy has been proposed as a means to reduce public opposition and develop more acceptable planning options. Traditional mechanisms of citizen participation are insufficient for integrating public opinion into the planning process and they may actually catalyze public opposition to proposed government projects.

This sourcebook describes the purpose and essentials of public participation, the potential of public participation for the development of waste management policy, the tools and mechanisms of participation, and a method of interfacing participatory efforts in the technical planning process. It describes a new approach to participatory planning and applies this approach to the development of hazardous waste management policy. Methods of program evaluation, the history of and legal requirements for participation under the Resource Conservation and Recovery Act are also discussed.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: A COMPARISON OF THE ENVIRONMENTAL KNOWLEDGE AND ATTITUDES BETWEEN DISABLED AND NON-DISABLED COLLEGE STUDENTS

AUTHOR: MARK F. HERMAN **DATE OF COMPLETION:** May 1981

INSTITUTION: Southern Illinois University at Carbondale, Carbondale, Illinois

DEPARTMENT / PROGRAM: Department of Recreation

THESIS ADVISOR: Dr. Douglas N. McEwen/ Dr. Paul A. Yambert

WHERE FULL THESIS IS AVAILABLE: Southern Illinois University at Carbondale, Morris Libr

A study was conducted to measure differences between the environmental attitudes and knowledge of disabled and non-disabled college students attending Southern Illinois University at Carbondale. The 75 subject disabled group was comprised of those individuals who use wheelchairs as their primary source of mobility. Demographic information regarding such variables as the male-female ratio, year in college, and academic major of the disabled group was obtained through the Specialized Student Services Office at Southern Illinois University at Carbondale in order to develop a similar non-disabled study group. The 115 subject non-disabled group was made up of students randomly sampled by computer who matched the above criterion.

Maloney, Ward and Braucht's Short Form Ecology Inventory (American Psychologist 1975, 30, 787-790) was used to test the environmental attitudes and knowledge of both study groups. The 45 question true-false, multiple choice inventory is divided into four subscales which measure the verbal commitment, actual commitment, affect, and knowledge of the environment and environmental issues. Three additional questions concerning the subject's sex, year in school and home town size were also included. No coding devices were used on either the questionnaire or return envelope to distinguish individual responses. The questionnaires were printed on two different colors of paper with each group receiving a specific color to distinguish between the two study groups. The questionnaire, cover letter and a postage paid return envelope were mailed to each subject. One week following the initial mailing a reminder letter containing another questionnaire and a postage paid return envelope were sent to each subject to insure a higher return rate.

The overall return rate for this study was 51.3%, as 100 of the 195 subjects completed and returned the questionnaire. The disabled group had a 46.7% return rate as 35 of the 75 subjects returned the questionnaires. The non-disabled group returned 65 of 115 questionnaires for a 56.5% response.

The information obtained from the questionnaires was hand coded and analyzed by computer. Four t-tests were used to evaluate the null hypotheses of the study. All four t-tests had values which were nonsignificant at the .05 probability level.

The statistical results for the knowledge and attitude subscales of the questionnaire reveal that there is no significant difference between the environmental knowledge and attitudes of the disabled and non-disabled student populations attending Southern Illinois University at Carbondale. The findings of this study provide more information for environmental educators, interpreters, and outdoor recreation specialists in the further development of environmental programs which can meet the needs of both non-disabled and disabled members of the population.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: The Surrogate Phenomenon: The Dangers of Substituting NEPAs Environmental Impact Assissment Process for an Effective Problem Solving Process

AUTHOR: James R. Stordahl **DATE OF COMPLETION:** May, 1982

INSTITUTION: University of Wyoming

DEPARTMENT / PROGRAM: Geography Department, Community and Regional Planning Program

THESIS ADVISOR: Dr. Hans Bleiker

WHERE FULL THESIS IS AVAILABLE: Geography Department, University of Wyoming

This paper introduces the concept of the "surrogate phenomenon," analyzes its effects, and recommends means by which it may be eliminted from public sector problem solving/decision-making. The surrogate phenomenon occurs when NEPAs environmental impact assessment process is inappropriately substituted for an effective problem solving/decision-making process. Much of the bitter controversy surrounding the environmental impact assessment process, which seriously undermines the intent of NEPA, is explained by the concept of the surrogate phenomenon.

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Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Education and Its Role in the Diffusion of Passive Solar Technologies

AUTHOR: Nancy A. Nylen DATE OF COMPLETION: Dec. 1981

INSTITUTION: University of Washington - Seattle, Washington

DEPARTMENT / PROGRAM: College of Education

THESIS ADVISOR: Roger Olstad

WHERE FULL THESIS IS AVAILABLE: University of Washington - Suzallo Library

During the past decade, interest in solar energy as an alternative to conventional energy sources has increased significantly. This interest is accompanied by a need to identify effective strategies for educating professionals about solar energy technologies. In this descriptive study I examine the effectiveness of a program aimed at educating building designers and contractors about passive solar techniques: the Washington Passive Solar Design/Build Competition. My focus is upon the educational value of the program and those aspects of the competition that contribute most to participants' knowledge of solar technologies.

I collected quantitative data to determine the success of the program in attracting participation by members of the target group. I also examined qualitative data compiled from post-competition questionnaires for evidence of learning associated with the competition and the primary sources of that learning.

The data indicate that the design/build competition format can be very successful in attracting the participation of professional building designers and contractors. Data also indicate that although technical information and workshops associated with the competition contributed to participants' learning about passive solar energy, the most valuable source of learning was the activity associated with the actual preparation of the entry.

Factors found to be critical to the effectiveness of the competition were: targeting the audience; providing incentives to solicit the participation of members of the target group; and providing resource materials, speakers and activities that challenge participants but not overwhelm them. The competition format was found to be effective in educating professionals because it provided them with incentives to participate (e.g. cash awards, publicity, and prestige) and a wide variety of learning opportunities.

The study of informal, non-traditional educational settings is relatively new, but of vital importance as more and more adults seek educational opportunities outside the traditional school setting. The study of this design/build competition is a step toward a better understanding of education in a non-traditional setting. The implications for adult education are widespread, both in areas of innovation such as solar energy as well as more traditional areas of study.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: The Islands Trust: An Institutional Experiment in the Management of Scarce Natural and Social Resources

AUTHOR: Laura Kathryn Porcher

DATE OF COMPLETION: July 1980

INSTITUTION: University of British Columbia

DEPARTMENT / PROGRAM: Resource Management Science

THESIS ADVISOR: Dr. A. Chambers

WHERE FULL THESIS IS AVAILABLE: Resource Management Science, University of British Colu

This thesis examines the Islands Trust as an institutional experiment in environmental management. Evaluation is made of the performance of the Islands Trust and the overall institutional system, on the basis of objectives stated prior to and following the inception of the Trust. Public choice theory proves useful in explaining the behavior of the three principle categories of actors in the institutional system: voters, bureaucrats, and politicians. The objectives of the study are 1) to examine the extent to which the Trust has fulfilled the intent of the Islands Trust Act, and 2) to discover the factors which have contributed to this degree of success or failure.

Initially a study is made of the legal and historical setting of resource management, both in Canada generally and specifically in the trust area. The evolution of the Islands Trust is described.

An examination of the intent of the Islands Trust provides the basis on which evaluation is made. Intent is derived from the Report of the Select Standing Committee on Municipal Matters which recommended instituting the Trust in 1973, the Legislative Debates from 1973 to 1979, and the policy statement of the Islands Trust in 1975. Summarizing these three sources, the Trust was intended 1) to act as the mechanism of coordination and control of island development, 2) to ensure orderly development of the islands, 3) to offer significant local control while protecting the provincial interests in the scenic beauty, rural atmosphere, and recreational amenities of the trust area.

Empirical analysis is made of three major problem areas in island development: Crown land, subdivision, and forestry. For each of these broad issues, statistics describing the problems, decision-making procedures, Islands Trust involvement, and Islands Trust relations with other agencies are examined. Case studies are used extensively. Islands Trust files, attendance at Islands Trust meetings, and discussions with islanders and government agencies are the main data sources.

Public choice theory suggests why the institutional system operates as it does. The theory makes two fundamental assumptions: 1) all people act rationally, and 2) all people act in their own selfish interests. The thesis makes an implicit assumption in its definition of vested interests that economic interests and interests in holding power as an end (rather than as a means to an end) are particularly strong motivators of behavior. Under these assumptions a model is built, describing the behavior of voters, bureaucrats, and politicians.

Empirically it is found that the Islands Trust has few powers with which to fulfill its mandate. Regarding the three main intents of the Trust, results were as follows: 1) No single mechanism of control of island development exists. Other government agencies are reluctant to cooperate with Trust objectives, and to submit to the coordinating role of the Trust. 2) Development has become much more orderly, but some environmental and social problems persist, over which the Trust has minimal control. 3) Since the Trust has little authority, there is little local control. Provincial interests are protected with a conservationist tendency. The Islands Trust has achieved success in fulfilling its mandate, to the extent that it has been given powers to do so.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Hazardous Substances in North Carolina: An Analysis of Public Perceptions

AUTHOR: James S. Mead et al. **DATE OF COMPLETION:** Dec. 1981

INSTITUTION: Duke University, Durham, NC 27706

DEPARTMENT / PROGRAM: School of Forestry and Environmental Studies

THESIS ADVISOR: Dr. Curtis J. Richardson

WHERE FULL THESIS IS AVAILABLE: Integrated Case Studies Program, address above

Hazardous substances have the potential to cause harm to human health and welfare as well as to the environment. The consideration of public input during the development of government programs to deal with any difficult issue can greatly improve the acceptance and effectiveness of these programs. A public opinion survey was conducted during 1980 under a grant from the Environmental Protection Agency by students at Duke University. A representative sample of 682 North Carolinians was randomly selected for telephone interviews. The sample size limits the error of results to plus or minus 4 percent. Respondents were asked approximately 50 questions concerning their attitudes and awareness of the full range of hazardous substance issues. This report describes the survey methods and results in detail and recommends courses of action for government agencies to increase public awareness and knowledge of hazardous substance management issues.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: How Preservation Efforts Affect Local Populations: An International Study of Communication, Conflict and Amelioration

AUTHOR: Mary L. Anderson **DATE OF COMPLETION:** 1981

INSTITUTION: University of Minnesota

DEPARTMENT / PROGRAM: Forest Resources

THESIS ADVISOR: Timothy B. Knopp

WHERE FULL THESIS IS AVAILABLE: Library, College of Forestry, Univ. of Minn

In an effort to learn about the effects of park and reserve designation on local populations, a questionnaire was designed and sent to several national park and reserve administrators around the world. The areas of inquiry included, (1) how governments communicate the purposes of protected areas to local people, (2) what the major concerns of park and reserve administrators are as relates to local activities, and (3) how local people are compensated for the loss of the use of statutorily protected land. The results from the nations which responded to the questionnaire show that there is a relationship between the economic status of a country and the conflicts with which park and reserve officials are concerned. Additionally, the methods of communication and compensation are related to both the nature of land use conflicts and the economic development of a nation.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: A Critique of Public Involvement Mechanisms and Assessments: The Canadian Experience

AUTHOR: Beverly Jaffray

DATE OF COMPLETION: July, 1981

INSTITUTION: University of Toronto

DEPARTMENT / PROGRAM: Geography/M.A. (Environmental Studies)

THESIS ADVISOR: Dr. A.P. Grima

WHERE FULL THESIS IS AVAILABLE: Department of Geography

The public's demands for increased public involvement in environmental planning and decisionmaking highlight the need for the development of effective and innovative mechanisms to facilitate public input in environmental management. A vital step in this development has to be an assessment of existing public involvement programs. This research focuses primarily on involvement program evaluation.

One of the fundamental factors in the analysis of involvement program assessments is the philosophical stance implicit in the evaluation approach. Accordingly, the first criterion applied in this research is the perspective adopted by the evaluator. Perspective is described by such variables as the evaluator's perception of the goals and objectives of the involvement procedure, and the weighting given to these in the final evaluation. Perspective influences a second criterion, the selection of indicators, i.e., the variables chosen by the evaluator as representative of involvement program achievement. This process of selection and definition of specific events and of types of information as being indicative of involvement program ahcievement is a critical component of evaluation design, and reflects the underlying biases and assumptions of the assessment approach. The third analytical criterion is the quantification of value-related variables. This is crucial to public involvement evaluation, where such ethereal qualities as participant satisfaction and the social advantages of the involvement process may be chosen as performance criteria. On the premise that modifications to enhance involvement program effectiveness are facilitated by assessment procedures which are embedded in the involvement program design, the final criterion of evaluation analysis is that of ongoing evaluation. Section IV examines seven public involvement program assessments with respect to these four criteria.

While the basic assumption underlying each evaluation is that public participation is both desirable and inevitable, the evaluations are seen to be distinguished by differences in the degree to which the public's participation is accepted, and by the goals of the assessment. As the choice of involvement mechanisms and the design and interpretation of involvement program assessments are intimately linked, the descriptive framework for these selected involvement mechanisms, and the analytical framework for involvement program evaluation, provide the basis for a methodology for a more integrated involvement program design.

The involvement program assessment critique which is the focus of this research, is preceded by three preliminary sections: section I introduces the research; section II reviews some of the current issues in public involvement, with particular reference to the theoretical and political context for participatory initiatives; and section III describes a functional taxonomy of advisory and informative participation mechanisms and presents a descriptive framework for the analysis of these mechanisms.

7. Resources, Administration and Others

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: SOURCE SEPARATION AS A SOLID WASTE MANAGEMENT OPTION: FOUR CASE STUDIES

AUTHOR: Helen Roland **DATE OF COMPLETION:** August 1, 1982

INSTITUTION: Cornell University

DEPARTMENT / PROGRAM: Education/Environmental Education

THESIS ADVISOR: Dr. Richard B. Fischer

WHERE FULL THESIS IS AVAILABLE: University Library

Municipal waste disposal has become an issue of national importance. The questions raised are not only where to put the waste, but also how to reap energy and materials from the waste and ultimately reduce its volumes. The long range solutions to the solid waste disposal problem involves changes in the economic structure of industry as well as changes in individual lifestyles.

Local governments are involved with the short term solutions to solid waste problems. Possible disposal options include traditional landfilling or incineration, burning wastes for energy, and passing legislation which would help reduce the amount of waste produced. Source separation, the sorting of materials from waste by the householder, is an option which has benefits for the community and the environment, and can be successfully implemented at the local level.

The viability of source separation as a solid waste disposal option is affected by state and federal government policies. The issues most relevant to source separation are the debate of high or low technology approaches to waste disposal and the federal government's role in improving markets for materials recovered in source separation programs. The packaging and solid waste management industries lobby for the high technology approach, while the secondary materials industries lobby for more source separation and better markets for secondary materials nationwide. Citizens groups support source separation programs for their environmental, educational, and social benefits.

Despite economic and social barriers, a substantial number of source separation programs are operating in the United States. Separate collection programs, where materials are picked up at curbside by municipal or community organizations, have proved to be the most effective in collecting large volumes of materials. Separate collection programs vary considerably in terms of administration, what is collected, and collecting and processing methods. Participation rates average 40%, according to a recent survey, and tend to be slightly higher in communities which have mandatory source separation ordinances.

The experience of four New York communities in operating separate collection-source separation programs demonstrates that there are certain components of success. These components include good administration and direction, aggressive marketing arrangements, efficient collection systems, and strong community support and participation. One of the most common difficulties encountered by the directors of the New York programs was the establishment of good markets for the materials collected. A source separation program must be designed as part of a comprehensive solid waste management plan. For communities interested in involving residents in an environmental problem, and finding a way to dispose of wastes, source separation is a viable alternative.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Land Use Classification Terminology: Variation in Meaning and Implications for Public Policy

AUTHOR: Michael D. Bruder **DATE OF COMPLETION:** 1980

INSTITUTION: University of Minnesota

DEPARTMENT / PROGRAM: Forest Resources, College of Forestry

THESIS ADVISOR: Timothy B. Knopp

WHERE FULL THESIS IS AVAILABLE: Library, College of Forestry, Univ. of Minn., St. Paul, MN 55108

On the largest scale, landscape planning involves the allocation of land and water to broad land use classes. The utility of this exercise is dependent on how well the public and decision makers communicate the qualitative aspects of the various designations or land use terms. This report compares five groups and the meanings they attach to five land use terms. Twenty-two environmental attributes were used to pinpoint differences in how these terms were perceived. Vagueness and ambiguity were pronounced and associated with group membership. The terms "multiple-use," "wilderness," and "state forest" showed the largest amount of ambiguity. "National park" and "state park" showed the greatest consensus in meaning. Studies of this kind can help to refine our language, evaluate input to the decision making process and identify the need for educational programs.

Environmental Education / Communication Project or Thesis Report Form

National Association for Environmental Education

TITLE: Snowmobiling in Minnesota: Growth and Government Response

AUTHOR: Walter Wieland **DATE OF COMPLETION:** 1980

INSTITUTION: University of Minnesota

DEPARTMENT / PROGRAM: Forest Resources

THESIS ADVISOR: Timothy B. Knopp

WHERE FULL THESIS IS AVAILABLE: Library, College of Forestry, Univ. of Minn., St. Paul, MN 55108

Between 1965 and 1973, the popularity of snowmobiling increased considerably in Minnesota. An examination of snowmobile registration totals compiled by the Minnesota Department of Natural Resources illustrates this fact. Whereas in 1965 there were probably fewer than 30,000 snowmobiles in operation in Minnesota, by 1973 this figure had increased to 270,000+. In addition, Minnesota quickly established itself as one of the world's leading snowmobile producers. During the 1971-72 production season, Minnesota producers turned out over 173,000 new snowmobiles. In addition, a 1974 study estimated that Minnesota snowmobilers spent over $160 million in the pursuit of their sport during the 1973-74 season.

The growth and economic significance of snowmobiling did not go unnoticed by the legislative and executive branches of state government, particularly the Minnesota Department of Natural Resources. Significant amounts of land and money were rapidly allocated to the new sport and not without conflict. In addition, legislation was passed to regulate and encourage the sport of snowmobiling. The snowmobile industry and user groups had considerable influence in the formulation of the state's response to the growth of snowmobiling.

While the state's rapid response to the growth of snowmobiling seems to have caused relatively few problems, it is suggested that a more carefully planned, rational approach be attempted in dealing with future recreational phenomenon such as snowmobiling.

GRADUATE PROGRAMS
in
Environmental Education and Communications

This is the fourth volume of Recent Master's Thesis Work to include descriptions of graduate programs in environmental education and communications. Each year our listing has grown reflecting, we feel, the importance of this reference to everyone working in the field.

Program information is requested from all institutions contacted for thesis abstracts. The information provided by the institutions is reproduced here exactly as they reported it.

The programs are listed alphabetically by state and then by institution. The information is organized in the following manner:

Name of the Institution — Name of the person to contact for more information
Division offering the program
Title of the program
(Degrees offered)

A brief description of the program.

We wish to thank all those who contributed information on their graduate programs.

California State University, Hayward
Department of Teacher Education
Curriculum Option with specialization in Environmental Education
(M.S.)

Esther P. Railton, Ed.D.
Professor of Teacher Educ.
Calif. State Univ., Hayward
Hayward, CA 94542
(415) 881-3016

A one-year option for K-14 teachers and other environmental leaders; courses offered late afternoon and evenings. Curriculum, advanced educational psychology, research, infusion of energy/environmental education into all subjects; resident school sites and community learning experiences; local and world wide view of E.E. Wide scope of lectures in environmental studies, urban/rural community. Program utilizes a California State grant-funded resource/research laboratory.

Humboldt State University
Department of Education
Master of Arts in Education:
Special Studies Env'l Education

Dr. Alan Leftridge
Environmental Education Coord.
Department of Education
Humboldt State University
Arcata, CA 95521

The major focus is to help students become proficient with the methods of effectively promoting environmental awareness. The degree is therefore directed at students interested in developing ways of sharing their concern for their environments with select audiences utilizing various educational and interpretive techniques. Degree may be obtained without possession of a teaching credential.

San Francisco State University
School of Education
Environmental, Camping & Outdoor Education
(M.A.)

Dr. William Hammerman
ECO Education Program
San Francisco State University
1600 Holloway Avenue
San Francisco, CA 94132
415/469-2282

The study of the utilization of the outdoors and community resources as learning laboratories. Emphasis is placed on curriculum development, teaching strategies, and evaluation.
Knowledge and skills in Environmental, Camping and Outdoor Education may be used by teachers, recreation leaders and interpreters in designing innovative instructional programs, developing effective teaching techniques, and improving human understanding.

Stanford University
Department of Communications
(M.A., Ph.D.)

William Paisley, Assoc. Prof.
Department of Communication
Stanford University
Stanford, CA 94305

Students in the M.A. programs focussing on Journalism, Film, Broadcasting, or Communication Media and Social Change as well as students in the Ph.D. program in Communication Research can elect to conduct thesis research on problems of environmental communication such as the flow of environmental information to the public and to policy-makers. Alternatively, students may participate in the design of information systems or campaigns to improve the flow of environmental information.

COLORADO

Colorado State University
College of Forestry and Natural Resources-Dept. of Education
Conservation Education
(M.Ed., M.S., Ph.D.)

Dr. Charles L. Mahoney
Prof. of Resource Conservation
Dept. of Recreation Resources
Colorado State University
Fort Collins, CO 80523

Graduate Programs lead to the Master of Education, Master of Science, and Doctor of Philosophy degrees. The Conservation Education program prepares students to become teachers at the junior high and secondary levels. Emphasis at the graduate level is on furthering knowledge of natural resources conservation and management, developiing more effective teaching techniques and innovative instructional programs.

DELAWARE

University of Delaware
College of Education
Educational Development
Environmental Education; Science Ed.
(M.Ed., Ed.D.)

Dr. Les Picker
College of Education
University of Delaware
Newark, DE 19711

This is a flexible program, designed to meet the employment needs of those entering the field of environmental education and/or science education. Teacher certification is required for entrance.

FLORIDA

Florida State University
Department of Curriculum & Instruction
Science Education (M.S.Ed.)
Social Studies Education (M.S.Ed.)

Rodney F. Allen, Professor
Social Studies Education

Ronald M. Good, Professor
Science Education

209 Education
Florida State University
Tallahassee, Florida 32306
904/644-6553

No specific program in environmental education is offered; however, master's candidates in science and social studies education may develop a program of studies with that focus. In fact, students are encouraged to do so.

GEORGIA

University of Georgia
College of Education
Adult Education (M.A.)
Science Education (M.A.)
Social Science Education (Ed.S)
Recreation & Leisure Studies (Ed.D.)

Professor R.N. Saveland
203 Dudley Hall
University of Georgia
Athens, Georgia 30602

Franklin College of Arts & Sciences
Geography Department (Ph.D.)

School of Environmental Design
Landscape Architecture (BLA,MLA)

School of Forestry

Institute of Ecology

No description of programs given.

HAWAII

University of Hawaii at Manoa
Dept. of Educational Foundations
Emphasis in Environmental Education
(Masters, Ed.D.)

Chairman, Graduate Field
Dept. of Educ. Foundations
University of Hawaii
West Annex 2, Room 222
1776 University Ave.
Honolulu, HI 96822

The Department has several areas of emphasis, one of which is environmental education. The program works in conjunction with the Environmental Studies Program in the University.

IDAHO

University of Idaho
College of Forestry, Wildlife,
& Range Sciences
Interpretation/Communication
(B.S., M.S., Ph.D.)

Dr. James R. Fazio
Dr. Sam H. Ham
Dept. of Wildland Recreation
Management
College of Forestry, Wildlife,
& Range Sciences
University of Idaho
Moscow, Idaho 83843

Interpretation/communication is one of three curriculum options in the Department of Wildland Recreation Management. In addition to an introductory course in interpretive methods, majors take an applied laboratory course, at least 12 supportive electives, and practice interpretation with local school groups and through seasonal employment with land management agencies.
Work in environmental interpretation, environmental education or resource communications may be pursued through interdisciplinary studies leading to the M.S. in Wildland Recreation Management or to the Ph.D. Other areas of concentration include recreation planning, wilderness and dispersed recreation management, tourism, economics, administration and others.

ILLINOIS

Governors State University
College of Arts & Sciences
Science Division
Science Teaching
Secondary (M.A.)
Community College (M.A.)
Elementary (M.A.)

Dr. Mohammed A. Kishta
Governors State University
Science Division
Park Forest South, IL 60466

Science teaching program is interdisciplinary in nature and competency-based program. The competencies focus on: a) science content, investigative abilities, information retrieval, and the history and philosophy of science; b) learning theories, curricular development, teaching skills and evaluation; and c) cultural diversity, humanistic values and perspective.

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Northeastern Illinois University
College of Arts & Sciences
Dept. of Geography & Environmental Studies
Geography & Environmental Studies
(M.A.)

Karl A. Kriesel, Grad. Coordinator
Dept. of Geog. & Env. Studies
Northeastern Ill. Univ.
5500 N. St. Louis
Chicago, IL 60625

Program is designed to provide advanced analysis of environmental and spatial systems. Included are ecological studies of human-environmental interrelations, studies of rapidly changing landscapes, locational studies concerning the geometrics of movement, size, shape and distance, and studies of environmental resources in terms of their interpretation, development and use. Urban land use planning sequence in also available.

Northern Illinois University
College of Liberal Arts & Sciences
see description
(M.S.)

Dr. Burley V. Bechdolt, Jr.
Office of Environmental Studies
Northern Illinois University
Dekalb, Illinois 60115

The university offers M.S. degree programs in the following departments whose programs make possible significant graduate work on environmental topics: Biological Sciences; Geography (emphasis in Natural Environmental Systems, Urban Economics, and Meteorology); Geology; Economics; Chemistry (Ph.D also); Physics; and Political Science (Ph.D. also).

Sangamon State University
Public Policy and Administration
Environmental Studies Program
(M.A.)

Dr. Malcolm P. Levin, Coord.
Environmental Studies Program
Sangamon State University
Springfield, Illinois 62708

The emphasis of the M.A. degree in Environmental Studies is on providing professional education in environmental analysis and planning. Students are trained to order and to compare information, concepts, and ideas in comprehensive and meaningful systems. Students select a concentration from one of the following: Environmental Administration, Environmental Planning, and Individualized Environmental Studies. Students may also pursue and Envergy Studies sequence.

Southern Illinois University
Curriculum, Instruction, & Media
Science/Environmental Education
(M.S.Ed., Ph.D.)

Dr. Harold R. Hungerford, Prof.
Dr. Peter A. Rubba, Asst. Prof.
Science/Environmental Education
Dept. of C.I.M.
Southern Illinois University
Carbondale, Illinois 62901

Degrees in either elementary or secondary education with an emphasis in environmental education are offered. Masters' programs involve a minimum of 64 semester hours. Many opportunities exist for practicing internships, practicums, research, and cognate courses outside the College of Education.

Department of Forestry
Environmental Studies

Paul A. Yambert, Professor
Southern Illinois University

No description of program given.

Southern Illinois University at Edwardsville
Interdisciplinary
M.S. in Environmental Studies
(M.S.)

George R. Arnold
Coordinator,
M.S. in Environmental Studies Program
S.I.U.E. Box 99
Edwardsville, IL 62026

The program utilizes the faculties of numerous departments. The curriculum is designed to serve students with widely different background. Besides developing marketable skills, the program presents a broad interdisciplinary perspective on major environmental activities. There are two options -- general and science.

INDIANA

Ball State University
College of Sciences & Humanities
Dept. of Natural Resources
Graduate Studies
(M.S., M.A.)

Dr. Donald E. Van Meter
Dept. of Natural Resources
Ball State University
Muncie, IN 47306

The Dept. of Natural Resources offers a graduate major in natural resources leading to a Masters of Arts or a Masters of Science degree. A cognate (minor) in natural resources is also available for graduate students pursuing a doctoral degree in several other disciplines. Graduate programs are individualized for each person, with consideration given to the student's undergraduate academic background, professional experience, and future employment interests.

Indiana University
School of Public & Environmental Affairs
Environmental Programs
(MSES)

J.C. Randolph, Director
SPEA Environmental Programs
400 E. 7th
Poplars 438
Bloomington, IN 47401

Most of the environmental programs of Indiana University emphasize the application of environmental science to the policy-making process. The approach is solution-oriented. Most programs provide a basic background, with varying emphasis, on technical skills, applied science, and knowledge of the political process. Students become specialists in particular aspects of environmental issues, yet have a broad perspective in terms of technical abilities and socioeconomic concerns.

Purdue University
Dept. Forestry & Natural Resources
Outdoor Recreation
(M.S., Ph.D)

Douglas M. Knudson
Dept. of Forestry
W. Lafayette, IN 47907

Interpretation as part of recreation resource management is studied in terms of economic and sociological impacts.

IOWA

Iowa State University
Professional Studies in Education
(M.S.)

Thomas Tanner
141 Bessey Hall, ISU
Ames, IA 50011
(515) 294-7252

(1) M.S. in education, specialty in curriculum. Environmental education faculty member will be major professor for those emphasizing EE and environmental studies.
(2) M.S. or M.A. in general graduate studies, for those wishing mainly to improve subject matter competence for teaching; EE and environmental studies may be program components.

KENTUCKY

Eastern Kentucky University
Dept. of Recreation & Park Administration
Recreation & Park Administration
(B.S., M.S.)

Dr. James McChesney
College of Health, Physical Education & Recreation
Dept. of Recreation & Park Administration
Begley 411
Eastern Kentucky University
Richmond, KY 40475

Degree in Recreation & Park Administration with opportunity to focus on outdoor/nature interpretation and recreation programs.
No thesis requirement.

Murray State University
Dept. of Instruction & Learning
Education (emphasis Environmental Education)
(M.A.)

Terry L. Wilson, Director
Center for Environmental Education
Murray State University
Murray, KY 42071

Murray State University offers graduate degrees with major emphasis in Environmental Education. The programs are administered by the center for Environmental Education and are designed to provide students with both classroom and practical experience. The program emphasizes holistic and humanistic approaches to teaching and learning, which focus on human/earth relationships. TVA's nearby Land Between the Lakes, a 170,000 acre national demonstration in environmental education and recreation, serves as an extended campus for formal and non-formal environmental education programs.

LOUISIANA

McNeese State University
College of Science
Environmental Science
(M.S.)

Dr. Victor Monsour, Chairman
Dept. of Environmental Science and Microbiology
McNeese State University
Lake Charles, LA 70609

This is a general program in environmental science. Thesis is optional. Total minimum semester hours for the degree with a thesis is 24; whereas without a thesis the minimum number of hours required is 36. Specialization comes via the thesis.

MARYLAND

The Johns Hopkins University
Dept. of Geography and
Environmental Engineering
(M.A., M.S.F., Ph.D.)

Dr. M. Gordon Wolman, Chairman
Dept. of Geography and
Environmental Engineering
The Johns Hopkins University
Baltimore, MD 21218

The program in geography and environmental engineering has three major facets: surficial earth processes, environmental engineering including systems analysis, and resources and human geography. The emphasis is upon research and teaching at the graduate level in problems crossing disciplinary lines. These include such areas as location of public facilities, regulatory mechanisms in resource management and pollution control, natural processes and their relatio to human activities, and the impact of human activities on spatial location and cities. Environmental education and communication are not formal aspects of the curriculum, but closely related to the work and participation of students and faculty in education and environmental decision making.

University of Maryland, College Park
College of Agriculture
Environmental Education
(M.S.)

Dr. Jack Wheatley
Agricultural and Extension Educ
Room 0220-Symons Hall
University of Maryland
College Park, MD 20742

This program provides expertise in content and methodology appropriat for outdoor education for school systems. Professional park naturalists also are attracted to the program due to this orientation. The program is cross-disciplinary, with students choosing courses from a number of areas, including biology, wildlife management, resource economics, education, and geography.

MICHIGAN

Michigan State University
Department of Fisheries & Wildlife
Natural Resources/Environmental Ed.
(B.S.)
Environmental Conservation Education
(M.S., Ph.D.)

Dr. R. Ben Peyton,
Assistant Professor
Dr. David I. Johnson,
Assistant Professor
Coordinator, NR/EE program
Michigan State University
East Lansing, MI 48823

An undergraduate program is offered as an interdepartmental effort by the Departments of Fisheries and Wildlife, Forestry, Parks and Recreation, and Resource Development. The NR/EE curriculum leads to certification in environmental education and an approved minor at the secondary level.
Graduate programs are available at both M.S. and Ph.D. levels. Emphasis depends on student needs and career goals may range from natural history interpretation to adult environmental education. Student programs may draw from a wide range of facilities and course offerings at Michigan State University.

University of Michigan
School of Natural Resources
Behavior & Environment Program
(B.S., M.S., Ph.D.)

Dr. William B. Stapp, Chairperson
2006 Dana
School of Natural Resources
University of Michigan
Ann Arbor, MI 48109

The School of Natural Resources offers both an undergraduate and graduate program in Behavior and Environment. Students can specialize in Environmental Advocacy, Environmental Communications, Environmental Instruction or Outdoor Recreation. All four concentrations share common concerns. In each case, the student is asked to take course work in three areas: Theory and Concepts; Skill Acquisition; and Effecting Change. Students desiring work experience are also field placed.

MISSOURI

University of Missouri, Columbia
Graduate School
Environmental Sciences
(M.S., Ph.D.)

Howard C. Hopps, M.D., Ph.D.
Committee Chairperson
Department of Pathology
School of Medicine
University of Missouri
Columbia, MO 65212

Emphasis is on a multidisciplinary approach to environmental problems -one that cuts across conventional disciplinary barriers. Programs are tailor-made to fit the individual student's needs, and are under the continual supervision of the Environmental Sciences Graduate Area Program Committee. Particular areas of strength include ecology, agricultural sciences, the physical sciences, including the Trace Substances Analytical Center, and sociological approaches to man-environment interaction.

MONTANA

University of Montana
College of Arts and Sciences
Environmental Studies Program
(M.S.)

Ronald E. Erickson
Environmental Studies
University of Montana
Missoula, MT 59812

The program accepts students from any discipline (including a few from education in the past eleven years). Our concern is for analyzing and "solving" environmental problems, and advocacy skills are required. Most students do thesis work on either scientific questions or issues of public policy.

New York University
Sch, of Education, Health,
Nursing & Arts Professions
Dept. of Cultural Foundations
Environmental Conservation Education
(M.A.)

Professor Tom Colwell
737 East Building
New York University
Washington Square
New York, New York 10003

Interdisciplinary Study of Major Environmental Issues. A wide range of elective courses from the many Schools and Divisions of the University in science and technology, media, social science and education are grouped around core courses and seminars in the philosophical and social issues of environmental problems.

State University of New York
at Brockport
Dept. of Biological Sciences
Biological Sciences
(M.S.)

Dr. Joseph C. Makarewicz
Dept. of Biological Sciences
113 Lennon Hall
SUNY Brockport
Brockport, New York 14420

The Dept. of Biological Sciences offers two plans for the Masters of Science Degree in Biological Sciences: Plan I (a thesis program) or Plan II (independent research experience in lieu of thesis). The expertise and experience of 26 faculty members service about 30 graduate students in several areas of research. Approximately 13 faculty are active in environmentally oriented research and teaching. The Department is well-equipped with both conventional instruments and a number of unique facilities (e.g. artificial streams). Field equipment for aquatic and terrestrial ecology are available including four boats. The close proximity of the Finger Lakes Region, Lake Ontario, the Adirondack Park of New York, and the 500 acres at Fancher Campus of SUNY Brockport provide ample sites for ecological research.

State University of New York
at Cortland
Division of HPER
Nature Recreation
Outdoor Education
Camping
(M.S., M.S.Ed.)

Dr. Linda R. Meyer
Coordinator, Graduate Program
Dept. of Recreation Education
A-310 PER Center
State University College, Cortland
Cortland, NY 13045

A program designed to give graduate level exposure to camping and outdoor education fields. Designed for teachers, camp administrators, nature recreation personnel, and outdoor educators in agency settings. Core of research methods, seminar in literature of recreation and research, administrative problems of camping, outdoor recreation, outdoor education, electives in arts and sciences and supporting areas.

State University of New York
at Plattsburgh
Institute for Man and Environment
Environmental Science
(B.A.)

Dr. James C. Dawson,
Director and Professor
Institute for Man and Env't
State University of New York
Plattsburgh, NY 12901

An undergraduate multidisciplinary program and opportunities to develop an environmental science degree with optional tracks in wildlife, ecology, alternate energy, planning, resource economics, and rural sociology. Students complete a senior-year research thesis at the Miner Lester satellite campus. Double major with Faculty of Professional Studies (includes education) is possible. No graduate program.

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State University of New York,
Syracuse
College of Environmental Science &
Forestry
Environmental Science
Environmental Education/Communication
(M.S., Ph.D.)

David Hanselman
Env. Education/Communications
311 Marshall Hall
SUNY-ESF
Syracuse, NY 13210
(315) 470-6551

This college is upper division and graduate. M.S. and Ph. degrees in Environmental Education and Communications are pursued through interdisciplinary studies in the Graduate Program in Environmental Science. Each student, working with his/her professor, charts an individual program based on three criteria: depth in an appropriate subject area; breadth of educational experience; and synthesis of the components. The College is adjacent to Syracuse University and through a unique contractual arrangement, GPES-EE/C students have full access to resources of both ESF and SU. Of particular strengths are the wide array of course offerings in Environmental Science (including Social Science) and Public Communication.

NORTH CAROLINA

Duke University
School of Forestry &
Environmental Studies
Master of Forestry (MF)
Master of Environmental Management
(MEM)
Graduate School (MS, MA, PhD)

Dr. E. Garrett Martin
Dir. of Admissions
Sch. of Forestry & Environ.
Studies
Duke University
Durham, North Carolina 27706

Two professional degrees (MF, MEM) are offered through the School of Forestry and Environmental Studies and are intended to provide students with education and experience for careers in resource management. Students interested primarily in teaching and research are urged to obtain the MS, MA, or PhD through the Graduate School. Areas of concentration are: Natural Resources Science/Ecology, Systems Science, and Economics/Policy. Additional opportunities are afforded by the Integrated Case Studies in Natural Resource Analysis program and the Center for Resource and Environmental Policy Research. Individualized programs and interdisciplinary study are encouraged.

North Carolina State University
Recreation Resources Administration
Recreation Resources
(M.S., M.R.R.)

Dr. Charles D. Siderelis
4008 Biltmore Hall
Sch. of Forest Resources
North Carolina State Univ.
Raliegh, NC 27606

The Master of Recreation Resources Administration is a professional degree designed for graduates interested in performing in the forl of recreation executive. The Master of Science is provided for graduates desiring a more adequate comprehension of research methodologies for the analysis of recreation systems and for seeking policy and management alternatives. Several specialization are offered.

OHIO

Antioch University
Glen Helen Outdoor Education Center
Teacher/Naturalist Internships
no degree offered

Jean Horn, Director
Outdoor Education Center
1075 St. Rt. 343
Yellow Springs, OH 45387

Graduate Students earn ten graduate credits going through five months of on-the-job training as naturalists, working with small groups of 5th-8th grade students who come by classes to our resident center. The facility is located in a 1,000-acre nature preserve owned by Antioch University.

The Ohio State University
Division of Environmental Education
School of Natural Resources
Environmental Education (M.S.)
Faculty of Science and Mathematics
Education (Ph.D.)

Dr. Robert Roth
246 Lord Hall
124 West 17th Avenue
Columbus, Ohio 43201
(614) 422-5589

Master's candidates may propose their own 45 hour thesis or 55 hour non-thesis program. The candidates progression of courses must be discussed with the graduate advisor prior to acceptance. Criteria for program acceptance includes coherence, and interpretation, education, or communications applicability. Courses may also be taken in other departments.

University of Cincinnati
Curriculum & Instruction
Environmental Education
(M.Ed., Ed.D.)

Dr. Thaddeus W. Fowler
Teachers College, #2
University of Cincinnati
Cincinnati, Ohio 45221

Individualized program in environmental education with major emphasis on environmentalizing the classroom and using community resources. There is strong cooperation with the U.S. EPA and Cincinnati. A practicum is required.

OREGON

Southern Oregon State College
Graduate School -General Studies
M.S. General Studies: Outdoor Education
(M.S.)

Dr. Ronald D. Faut
Biology Department S.O.S.C.
Ashland Oregon 97520

The outdoor education program strives to develop leaders in conservation and outdoor education. The program gives the student a broad background in the sciences and the social sciences, and and an understanding of the interrelationships of the ecological and economic aspects of conservation. Techniques of outdoor education are emphasized.

PENNSYLVANIA

Pennsylvania State University
College of HPER
Recreation and Parks
(M.S., M.Ed., Ph.D., D.Ed.)

Herberta M. Lundegren
267 Recreation Building
Penn State University
University Park, PA 16802

The graduate program is designed to prepare students for administrative, supervisory, research and teaching positions in public recreation and park systems, in colleges and universities, in voluntary agencies, and in institutions. The program is oriented to meet the specific needs and research interests of each candidate.

Slippery Rock State College
School of Professional Studies
Environmental Education
(B.S. in EE, M.Ed.)

Dr. Craig C. Chase
Environmental Education
Slippery Rock State College
Slippery Rock, PA 16057

The undergraduate degree is designed to provide the student with interdisciplinary, holistic values as presented by the academia of many departments of the college.
The graduate degree is designed to prepare program administrators with an expertise in EE programs, siteplanning, and fund-raising as well as a field knowledge of environmental components encountered.

University of Pittsburgh
Teacher Development
Science Education
(M.Ed., Ed. D.)

Dr. Albert P. Nous
Assoc. Professor of Science Ed.
4C12 Forbes Quadrangle
University of Pittsburgh
Pittsburgh, PA 15260

Master and Doctoral level coursework is directed at the design of instructional resources, assessing the extent of cognitive growth of science concepts in young children and adolescents, uses of microcomputers in environmental simulations, and assessing needs of school and community interest groups. The improvement of science education in schools is the primary goal.

SOUTH CAROLINA

Clemson University
Recreation and Park Administration
Environmental Interpretation
(M.R.P.A.)

H. Jesse Grove
277 Lehotsky Hall
Clemson University
Clemson, S.C. 29632

Students are prepared to function as historic/natural site interpreters themselves, or to effectively utilize the talents of staff interpreters in the role of a recreation and park administrator.

TENNESSEE

East Tennessee State University
School of Public & Allied Health
Environmental Health
(M.S.E.H.)

Monroe T. Morgan, Dr.P.H.,
Professor & Chairman
Dept. of Environmental Health
P.O. Box 22960A
East Tennessee State University
Johnson City, TN 37601

Graduate education in environmental health is offered to prepare administrative and technical generalists for a variety of high level positions. Emphasis may include a variety of areas, such as epidemiology, water resources management, food sanitation, air pollution control, solid waste management, occupational safety and health, environmental analysis, and more.

University of Tennessee
Liberal Arts
Graduate Program in Ecology
(M.S.. Ph.D.)

Dr. Susan E. Riechert
Zoology Dept.
University of Tennessee
Knoxville, TN 37916

The Graduate Program in Ecology at the University of Tennessee is an interdepartmental program which utilizes resources of the College of Liberal Arts, Agriculture and Engineering to offer a balanced, in-depth, advanced education in contemporary ecology. At present, this program includes approximately 100 students and 50 faculty members and offers approximately 80 graduate courses in ecology and supporting fields.

TEXAS

Stephen F. Austin State University
School of Forestry
School of Education
Outdoor/Environmental Education
(B.S., M.S., D.F.)

Dr. Michael Legg
Box 6109 SFA Station
Nacogdoches, TX 75962

A strongly resource oriented program that is cooperative between the Schools of Education and Forestry. Oriented toward preparing teachers for teaching in outdoor laboratories or nature centers.

Texas A&M University
Department of Recreation & Parks
Recreation & Resources
Development (Interpretation)
(MAg., M.S., Ph.D.)

Dr. John W. Hanna
Dept. of Recreation & Parks
Texas A&M University
College Station, TX 77843

The Interpretive Option is designed to identify and provide scientific solutions to communication problems encountered by administrators, managers, practicioners, and educators. The focus is upon interpretive program management with emphasis on the utilization of interpretation as a resource management tool.

UTAH

University of Utah
Dept. of Communication
Communication
(M.A., M.S., Ph.D.)

Robert K. Avery, Director of Graduate Studies
Dept. of Communication
University of Utah
Salt Lake City, Utah 84112

The department of communication at the University of Utah provides a broad-based theoretically oriented graduate program in communication studies. A primary area within the program is policy research and matters directly related to policy research. Environmental education studies within a communication theory framework are strongly encouraged.

VERMONT

University of Vermont
School of Natural Resources
Natural Resources Planning (M.S.)

College of Education & Social Serv.
Teacher Education (M.Ed.)

Thomas R. Hudspeth
Environmental Program
University of Vermont
153 S. Prospect
Burlington, VT 05405

Emphasis in Environmental Interpretation as part of a 30-hour program in Natural Resource planning (M.S. degree) in the School of Natural Resources.
Emphasis in Environmental Education as part of a 30-hour program in Teacher Education (M.Ed. degree) in the College of Education and Social Services.

VIRGINIA

University of Virginia
Art and Sciences
Dept. of Environmental Sciences
(B.A., M.S., M.A., Ph.D.)

George M. Hornberger, Chairman
Dept. of Environmental Sciences
University of Virginia
Charlottesville, VA 22903

In 1969 the University of Virginia established an interdisciplinary program in environmental sciences to further the understanding of natural and human environments, to foster scientific analysis of environmental issues and problems, and to develop a rigorous academic program for students interested in a comprehensive approach to questions of environmental quality. The department attempts to educate two types of person: a) those who wish to acquire a broad, thorough understanding of basic environmental phenomena and processes, and b) scientists who can make effective contributions to the fundamental knowledge of environmental systems.

WASHINGTON

University of Washington
College of Education
C & I: Environmental Education
(M.Ed.)

Dr. Roger G. Olstad
115 Miller DQ-12
University of Washington
Seattle, WA 98195

A program intended for certificated teachers who wish to specialize in environmental education during Master's degree study. It combines work in environmental studies with education, and includes independent study options for students to explore areas of particular interest.

University of Washington
Institute for Environmental Studies (FM-12)
"Interns in Environmental Decisionmaking"
None

Ms. Vim Crane Wright
Asst. Director
Instit. for E. Studies
U. of Washington
Seattle, WA 98195

The "interns in Environmental Decisionmaking" graduate program was established to train graduate students from a variety of departments in the social, natural and physical sciences to apply technical information in making policy decisions about complex environmental issues. The program involves two core courses ("Science and Environmental Policy, Theory" and "Case Studies"), a 4-18 month internship, and a summary paper.

Washington State University
Colleges of Education, Science, Agricult., & Engineering
Environmental Science/Regional Planning
(BS, MS, MRP)

Dr. Eldon Franz
E.E. Coordinator
Program in Environ, Sci. & Regional Planning
Washington State U.
Pullman, WA 99164-4430

The program coordinates education in two closely related fields: environmental science and regional planning. The course of study for each student is flexibly designed in a unique multi-optional interdisciplinary context. Majors specializing in Environmental Education are granted Senior High School teaching certificates with endorsements for the major and minors in physical and biological science.

WEST VIRGINIA

West Virginia University
Division of Forestry
Environmental Concerns and Interpretation
(M.S.)

Dr. Gene Bammel
325 Percival Hall
West Virginia University
Morgantown, WV 26506

W.V.U. offers a graduate program in Environmental Education preparing the graduate for a career in Environmental Education, Administration or policy Analysis. Course work is complemented either by a thesis or by a research problem. Some research assistantships are available.

WISCONSIN

University of Wisconsin, Madison
Center for Environmental Communications & Education Studies
Environmental Communications
(M.A., M.S., Ph.D.)

Dr. Clay Schoenfeld, Chairman
Center for Environmental Communications & Education Studies
433 North Murray
University of Wisconsin
Madison, WI 53706

The Center for Environmental Communications and Education Studies is an informal consortium of faculty and students from a number of UW-Madison departments, devoted to appropriate cooperative teaching, research, and extension programs. The Center aids the professional training of specialists in environmental communications, sponsors studies of environmental communications media and methods, and provides various symposia and services.

Department of Agricultural Journalism
Natural Resources Communication
(MS)

John H. Fett, Chairman
440 Henry Mall
University of Wisconsin
Madison, WI 53706

To provide individually designed programs to equip natural resources professionals with better communications skills, journalists with more complete environmental knowledge, and both with an understanding of evaluation research.

Institute for Environmental Studies
Land Resources Program
(M.S., Ph.D.)

Dr. Arthur E. Sacks,
Administrator of Academic Programs
IES Instructional Program
70 Science Hall
550 N. Park Street
University of Wisconsin
Madison, WI 53706

Land Resources is an interdisciplinary program leading to the Master of Science in Land Resources and the Doctor of Philosophy with a major in Land Resources. The degree is especially designed for students who wish to broaden their field of knowledge related to land and natural resources or who, because of employment or other experience, find they need special training in the technical, social, or management aspects of land.

University of Wisconsin, Stevens Point
College of Natural Resources
Environmental Education
(M.S.)

Richard Wilke
College of Natural Resources
Univ. of Wisc.-Stevens Point
Stevens Point, WI 54481

The College of Natural Resources offers both an undergraduate and graduate program in Environmental Education. Students can specialize in Environmental Education Instruction, Adult and Community Based EE, Environmental Communication or Environmental Interpretation. In all cases students develop competencies in ecology, environmental awareness, issue investigation and evaluation, and environmental action. Relevant practical experience is available for all through the University's Central Wisconsin Environmental Station.

WYOMING

University of Wyoming
Grad. Program in Community & Regional Planning
Master in Planning Program
(MP)

Hans Bleiker, Director
Community & Regional Planning Program
c/o Dept. of Geography
University of Wyoming
Laramie, Wyoming 82071

This program is designed to prepare individuals to function as managers, directors and administrators of multi-disciplinary, public-sector problem-solving/decision-making efforts.

CANADA

University of Alberta
Department of Forest Science
Master of Science Program in Forest Science
(M. Sc.F.)

Linda Ehrler or Doug Walker
Department of Forest Science
714 Chemical-Mineral Engineering Building
University of Alberta
Edmonton, Alberta T6G 2G6

The Department of Forest Science offers a Master of Science program. Other departments within the Faculty of Agriculture and Forestry offer expertise in forest-related areas. Entrance requirement is normally a B.Sc.F. or its equivalent, although flexibility is possible in developing programs for applicants with Bachelor's degree in another discipline.

University of British Columbia, Vancouver
Resource Management Science
(M.Sc., Ph.D.)

L. M. Lavkulich, Chairman
Resource Management Science
University of British Columbia
3075 West Brook Mall
Vancouver, B.C., Canada
V6T 1W5

Program is an interdisciplinary program in resource management. Students may specialize in a number of concentrations viz land management, wildlife management, fisheries management, range management, water resources management and ecological policy analysis. New concentrations being developed include renewable energy and aqua culture. Programs are "tailor-made" for individual students to meet student desires as well as academic excellence.

University of Calgary
Faculty of Environmental Design
Environmental Science
(M.E.Des.)

Dr. Dixon Thompson
Programme Director
Faculty of Environ. Design
Environmental Science
The University of Calgary
2500 University Drive N.W.
Calgary, Alberta T2N 1N4

The degree Master of Environmental Design (Environmental Science) prepares students for the new and expanding professional and scientific research opportunities in environmental consultant practices and government programmes. It embraces the spectrum of interests, among them impact assessment, landscape rehabilitation, ecological analysis and modelling and research, The programme normally requires three years of study. Although a professional accreditation body does not yet exist in this field, graduates are in high demand in both public and private sectors.

University of Toronto
Institute for Environmental Studies
Collaborative Programme in Env. St.
(M.A., M.Sc.)

Professor A.P. Grima
Coordinator of Graduate Studies
Instit. for Environ, Studies
The Haultain Building
170 College Street
University of Toronto
Toronto, Ontario M5s 1A4

The Institute for Environmental Studies is an interdisciplinary centre for research and study which offers association with a wide range of natural and social scientists. The primary goal of the Institute is to provide the facilities and academic climate for problem-oriented research to those who wish to maintain their discipline-based academic work. M.A./M.Sc. programmes are therefore undertaken on a collaborative basis with the departments of Geology, Botany, Forestry, Zoology, Geography, Anthropology, Political Science and Public Administration.